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CLINICAL DIAGNOSIS OF IRREGULARITIES OF THE HEART.

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The "pace-maker" or sinus node is situated in the right auricle at the mouth of the superior vena cava. From this point waves of contraction go forth in orderly rhythm over the right and left auricles. As this wave of contraction reaches the auriculo-ventricular node situated in the lower portion of the right auricle, the stimulus goes through the node down the main auriculo-ventricular conducting bundle; then into the right and left branches of the bundle; and finally into the ventricular musculature through the Purkinje fibers. Normally these stimuli go out from the pace-maker about 70 times per minute, and with regularity; and the ventricles contract following the contraction of the auricles. The sinus node or pace-maker is to a certain extent under control of the vagus nerve; hence certain individuals, particularly children, young adults, and athletes, exhibit an irregularity of the heart dependent upon this vagal control. That is, there is a slowing of the pulse during expiration and a quickening of the pulse during inspiration. This type of irregularity is known as sinus arrhythmia.

SINUS ARRHYTHMIA. Sinus arrhythmia is by far the most frequent irregularity amongst people in early life. It is of great importance to recognize and appreciate the meaning of the irregularity; not because of the graveness of the irregularity, but rather by recognizing it, not to confuse it with the more serious arrhythmias. Such a type of irregularity should be easily recognized. It occurs most often in young people. There is a definite waxing and waning of the pulse with respiration—this relationship being more marked in deep breathing. The whole heart takes part in the irregularity; the radial pulse and heart beats correspond. Sinus arrhythmia is abolished by any factor which appreciably increases the pulse rate, for example, exercise or fever. This type of irregularity needs no treatment and is usually, especially in young people, the sign of a healthy heart, and hence of good prognosis.

PREMATURE CONTRACTIONS. Premature contractions or extrasystoles may be defined as contractions of the heart that disturb the rhythmic sequence by appearing early in response to pathological impulses. Impulses, causing premature contractions, may spring from either of the ventricles or from any abnormal point in the auricles; that is, they do not arise in and travel from the sinus node as the normal impulses, heretofore described, do. If the abnormal impulse arises in the ventricle, it disturbs the sequence of the contraction in a definite manner. Following this ventricular premature contraction, the ordinary impulse starts down from the auricle in the usual way; however, it reaches the ventricle before it has had time to recover from its abnormal premature contraction and the ventricle cannot respond. Since the ventricle contracts only from impulses received from the auricles, excepting the premature ventricular impulse, then following such a premature ventricular contraction the ventricle does not contract again until another normal auricular impulse comes down. Hence, there occurs a pause known as the "compensatory pause;" that is, the longer interval after the abnormal contraction compensates for the preceding shorter interval. When the premature contraction occurs in the auricle, it usually causes a premature contraction in the ventricle also. There is a pause following the premature beat, but this pause is not compensatory; that is, the whole period of the disturbance is not equal to two normal cycles. Hence, the dominant rhythm of the heart is disturbed as the next auricular contraction comes earlier and is followed by the ventricular contraction.

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Ventricular extrasystoles are about ten times more frequent than auricular extrasystoles and are of less importance clinically. Auricular extrasystoles may occur in hearts without any known pathological condition; however, they are more apt to occur in diseased hearts, especially in rheumatic hearts where they are apt to be the precursor of auricular fibrillation. Most people who reach middle life probably have had extrasystoles at some time or other. The finding of extrasystoles should cause us to direct particular attention to the cardiovascular system and to determine the presence or absence of heart disease. The extrasystole, as an isolated factor, is of no value in prognosis; however, extrasystoles are more apt to occur in diseased hearts. Occasionally the extrasystoles may be traced to tobacco, foci of infection, or intoxication by drugs,—particularly digitalis.

Premature beats should be recognized and differentiated from the so-called "dropped beats" associated with heart block. If we are examining the radial pulse, but preferably the carotid pulse, of a patient who is having premature contractions, we may notice a weak pulse occurring before the next pulse is due, or we may notice that there is a long pause between the pulsations. Now if we listen to the heart at the same time, we notice that one of two things happens: a. with the premature weak pulse there occur two extra, usually weak, heart sounds, or b. with an intermission of the pulse there will be only one extra heart sound, the explanation being, that if the contraction of the ventricle is so weak that the aortic valves do not open, then there is no second sound and no blood is ejected to create a pulse wave. Depending upon the grouping of the extrasystoles are different variations of the normal and abnormal sounds and pulse waves. As stated above, the "compensatory pause" differentiates the ventricular from the auricular premature contractions; however, this is at times very difficult unless we have graphic records. It is important to remember that, with any intermission of the pulse in premature contractions, there develops either one or two extra heart sounds; whereas, in the "dropped beats" of heart block, no heart sounds are heard at the time of the intermission of the pulse.

A brief word in regard to treatment. The finding of extrasystoles demands immediate close scrutiny of the cardiovascular system for evidence of disease. If heart disease is found, such discease should be treated. If no such disease is found, or even if found, factors such as foci of infection, tobacco, alcohol, or fatigue, which apparently have some relationship to premature beats, should be sought after and controlled. Nervous and apprehensive patients should be reassured. Finally, if the extrasystoles really annoy the nervous patient, quinidine sulphate in dosage of three grains two to three times per day may be tried; however, its use should be restricted to the severe cases. Bromides and the barbituric acid derivatives sometimes have a good symptomatic effect. Digitalis as a direct resort is usually contraindicated.

PAROXYSMAL TACHYCARDIA. For our purposes paroxysmal tachycardia may be considered as a sudden acceleration of the heart rate due to a regular rapid series of extrasystoles. Just as a simple premature contraction may be auricular or ventricular in origin, so paroxysmal tachycardia may be either ventricular or auricular in origin.

The highest incidence is between the ages of 20 and 30 and the disorder is more frequent in men. Some patients do not show any evidence of cardiac enlargement between attacks and most patients do not show evidence of valvular disease; however, of the valvular lesions mitral stenosis is most common.

The onset of paroxysmal tachycardia is sudden and the ending is abrupt. The rate may vary from 110 to 220 per minute, though the rate is usually from 180 to 200. One important point in differentiating paroxysmal tachycardia from ordinary sinus tachycardia is that, in paroxysmal tachycardia, the rate of the ventricular beating remains exactly the same when the patient passes from the upright to the recumbent position or *vice versa;* whereas, in simple sinus tachycardia, there is a change in the rate. In paroxysmal tachycardia the rate seldom ever varies more than a few beats during the entire attack. In auricular tachycardia the rhythm of the responding ventricle is absolutely regular, and there is scarcely a variation of 1/1000 of a second between any of the beats in a given paroxysm. In ventricular paroxysmal tachycardia there is usually a very slight irregularity. Often we have to listen several minutes before it is appreciated, but occasionally, the heart sounds will not be quite the same and will be a little irregularly spaced. At times there is a prominent pulsation of the veins of the neck. The duration of the attack varies from a few seconds to a week or more;

attacks lasting weeks are rare. The symptoms of an attack vary and depend upon the duration of the attack and the ability of the heart to withstand the added strain. At the onset of the attack the patient often notices varying degrees of palpitation and discomfort in the region of the heart. Pulsating sensations in the neck veins and a fullness of the throat are also usually present. Some patients complain of lassitude, exhaustion, coldness, sweating and often, of nausea or vomiting. There are two types of symptoms connected with the heart that may occur and may be noticed by the patient: first, pain which varies from simple aching to the anginal type of pain; second, signs and symptoms of progressive failure of the heart, such as shortness of breath, and swelling of the feet and ankles. At the end of a severe attack it is remarkable what a quick recovery the patient makes.

Treatment consists of two parts: management of the attacks and care of the patient between attacks. There is no remedy, either drug or physical, which will invariably stop an attack. Firm pressure over the carotid artery at the angle of the jaw will sometimes immediately stop an attack, and, if this is so, this fact helps confirm the diagnosis of paroxysmal auricular or ventricular tachycardia and to differentiate it from flutter. Pressure over the eye ball (oculo-cardiac reflex) sometimes stops the attack. Various other mechanical or reflex methods are used and often the patient will know the method which is most efficacious in his own case. Drug therapy is often without success. In some cases the distress and the attacks may be relieved by bromides or one of the barbituric acid derivatives. In the severe cases morphine may be tried. Digitalis or strophanthin intravenously sometimes stops attacks, though it is probably best to reserve such measures for cases exhibiting congestive failure. Quinidine sulphate, by mouth, is one of the most useful drugs and may be occasionally used intravenously in severe cases. Recent work shows acetyl-beta-methylcholine chloride (Merck) to be of distinct value; this drug along with quinidine is not without danger.

The treatment between attacks consists: first, of careful attention to personal hygiene as discussed under the head of extrasystoles, and secondly, of treatment of any organic heart disease present. Finally, quinidine in daily rations may prevent attacks; rarely, digitalization followed by maintenance dosage may be useful. Bromides and like measures often quiet nervous patients and prevent attacks.

AURICULAR FLUTTER. Auricular flutter may be defined as a disorder of the auricular action characterized by regular but abnormal auricular contractions at a very rapid rate, and usually, but not always, regular ventricular action at one-half the auricular rate. Without going into detail I might state that there are two main theories as to the mechanism of flutter: that of Sir Thomas Lewis, namely, that of the circulation of a wave of contraction around a ring of muscle in the auricle; and that of Rothberger and Winterberg, Scherff and Camp, which maintains that the auricle contracts regularly and rapidly because of an abnormal pacemaker developed in the auricle. Auricular flutter is rare; but since its recognition is only comparatively recent, it is probably not so rare as present statistics indicate. Auricular flutter is more apt to occur in older people; three-fourths of the cases are over 40 years of age. It is more likely to be found associated with organic heart disease.

Usually there are no characteristic symptoms of auricular flutter. Symptoms of the accompanying heart disease may be prominent. If the ventricle responds to every beat of the auricle, the ventricle may reach a rate of 300 per minute; in such cases weakness, dizziness or faintness and at times actual syncope may occur. The characteristic sign of flutter is a rapid rate which may be maintained for days, weeks and occasionally years. The rate does not usually vary with exercise, rest, or various positions, and at times drugs have very little effect on the rate. The rate at the apex and usually the radial pulse rate are generally about 150 per minute, which is usually one-half the auricular rate of 300. The rhythm may at times be irregular, for the impulses from the auricle, instead of exciting the ventricle every other time, may cause contraction every third time for a while and then switch back to every second time. Such cases may seem to be absolutely irregular; however, if one is careful in the examination, there can be established some definite regularity which varies from time to time. Auricular flutter must be distinguished from simple auricular or ventricular tachycardia. The following points are important: the ventricular rate in flutter is usually not so fast as in paroxysmal tachycardia; the rhythm in flutter is apt to change from time to time, and as the block increases or decreases, so does

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the pulse rate; pressure on the carotid sheath either has no effect in paroxysmal tachycardia or suddenly stops the tachycardia. In flutter the rate usually is slowed down slightly for a while but the flutter is rarely stopped by carotid pressure. Finally, in many cases, graphic records, preferably the electrocardiogram, are necessary to make the diagnosis of flutter; and in suspected cases the electrocardiogram should always be taken.

Auricular flutter is best treated by digitalis. Digitalis may be given 1½ grains, three times a day, for two or three days, or, in some cases, for a week. By this time the flutter is often converted into auricular fibrillation and if digitalis is stopped, the rhythm may revert to normal. If this does happen, it is not necessary to continue digitalis unless it is indicated by other co-existing factors. If the flutter persists, but because of a high grade block the ventricular rate is slow—say 75—then digitalis may be continued, giving 1½ grains per day. Quinidine sulphate may be tried in those cases which do not respond to digitalis. Complicating factors of heart failure should be treated as much as the flutter.

AURICULAR FIBRILLATION. Auricular fibrillation for practical purposes may be considered to have the same mechanism as flutter except that the auricular action in fibrillation is absolutely irregular and more rapid, the auricle giving off impulses varying from 400 to 600 per minute. Since such impulses are coming down from the auricle in such an irregular manner, we would expect the ventricular contraction to be absolutely irregular. Such is the case. Furthermore, the beats are not only irregular in regard to rhythm but are of varying and unequal strength of contraction, and in untreated cases the ventricular rate is rapid, although of course not as rapid as the auricular rate. Due to the weakness of some of the contractions, there is a failure of pulsation in the peripheral arteries; hence, when we count the ventricular rate at the apex and the pulse rate, we find that there is a pulse deficit; that is, the rate at the apex is higher. On taking the blood pressure in such cases we note that on the strong beats the mercury rises much higher than on the weaker beats.

Auricular fibrillation is perhaps the third most common irregularity. Auricular fibrillation is usually associated with heart disease. Mitral stenosis of rheumatic origin was thought to be the associated condition in the majority of the cases; however, Dr. Ronald Grant and I found that in about one-half the cases, the only co-existing factor was arteriosclerotic heart disease. Hyperthyroidism is often associated; so also is coronary occlusion. Aortic disease is rarely associated.

When the ventricle is beating irregularly at 120 per minute, auricular fibrillation is almost surely present. This suspicion would be strengthened almost to a certainty if the patient also had mitral stenosis, an enlarged heart or other signs of arteriosclerotic heart disease. One most important thing to remember is that in auricular fibrillation acceleration of the heart rate makes the ventricular rhythm more irregular and increases the pulse deficit. In irregularities due to extrasystoles or sinus arrhythmia, increasing the rate tends to abolish the irregularities. In mitral stenosis the murmur often changes as auricular fibrillation sets in.

There are no symptoms characteristic of the fibrillation *per se*, and the clinical findings on which we make the diagnosis are based on the resulting ventricular disturbance and not directly on the auricular disturbance. The changing murmurs of mitral stenosis are an exception. Palpitation and fluttering are often complained of. Congestive failure signs and symptoms are frequent. Angina pectoris is rare.

The treatment consists in prompt and complete digitalization followed by a daily maintenance dose. If the fibrillation is known to be of short duration and in a relatively little diseased heart, quinidine may be used to try to convert the rhythm to normal. Such treatment is better carried out where electrocardiograms may be frequently taken during the active treatment. Congestive failure is treated in the usual manner.

HEART BLOCK. When due to some toxic, functional, or organic factor or a combination of these, there is a delay in the passage of the impulse, or no passage of the impulse from the auricle to the ventricle, heart block is said to be present. The block may vary from very slight degrees which may be recognized only by the aid of the electrocardiogram, to the more pronounced type with occasional dropped beats, and finally to a complete dissociation of the auricle and ventricle. In the latter case the auricle and ventricle take up independent and separate rates and rhythms. The rhythm of the auricle and the ventricle both is usually regular. Permanent organic heart block is most frequently caused by coronary artery disease. Other causes are rheumatic

fever, congenital lesions and syphilis. About 90 per cent of cases occur in people beyond fifty years of age.

Recognition of many types of heart block is impossible without graphic methods; and again the electrocardiogram is by far the most reliable. In simple delayed conduction there are two suggestive signs: first, the reduplication of the first heart sound, or at times of the second sound; second, the change in character of the murmurs of mitral stenosis. However, these simpler grades are usually missed. It is not until we get to the dropped beat that we are able to recognize heart block. If, when feeling the pulse and listening at the apex, there is a long pause during which there is no pulse felt and no heart sounds heard, this is very suggestive of heart block with dropped beats. If this occurs regularly, as every third or fourth beat, and not associated with respiration, it is most likely heart block. As stated before, during the intermission of the pulse in premature beats, there can be heard either first or second heart sounds or both. After exercise the block may disappear and the heart become regular, and when the heart slows down, the first irregularity noted will be an unusually long ventricular pause. Dropped beats may occur only occasionally or after every third or fourth beat. A two to one block is suspected if the ventricle beats regularly at 40 to 50; and if this rate suddenly becomes doubled and then halved after exercise a two to one block is most surely present. In complete block the ventricular rate is usually 35 or under; first and second heart sounds can be heard with each contraction; often muffled auricular heart sounds can be heard between and without relation to the ventricular beats. The rhythm is usually regular. Exercise has little or no effect on the rate. Change of the character of the heart sounds from beat to beat depending upon the occurrence of auricular systole is also an important sign.

The symptoms of heart block depend upon the degree of block and the associated heart disease. Adams Stokes syndrome occurs in high grades of block with extreme slowing of the ventricles. It is very rare.

Treatment consists in treating the accompanying disease, and in severe degrees of block, of treating the block. Atropine is sometimes effective; barium chloride has been used; thyroid extract has also been tried; adrenalin and ephedrine sulphate are by far the most useful; adrenalin given subcutaneously is at times life saving.

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Professional Building.

DIFFICULTIES IN TREATING FRACTURES.*

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Difficulties in diagnosing fractures are solved by the X-ray. I have no false pride in this matter at all, and always request films except in the simplest cases. I am, therefore, confining myself to difficulties in treatment.

The first difficulty, of course, is the matter of getting the fracture suitably reduced. It is done, in general, by manipulating the broken bones while they are being strongly pulled upon, usually under local or general anaesthesia.

It is surprising how strong a pull may be necessary; for instance, in the supracondylar fracture of the humerus, even in small children; and in some fractures it is almost impossible immediately to overcome the tension of the muscles and fascia, whatever it is that holds the bones together, without some mechanical device like the new screw-traction ma-

*Read before Norfolk County Medical Society, October 12, 1936.

chines that act upon Steinmann pins put through the bones themselves. Hippocrates used a block and fall, and so do some of the modern fracture men. In the case of the femur, spinal anaesthesia may permit immediate reduction, where otherwise heavy traction for several days might be needed.

The earlier you reduce the fracture, the less pull you have to use; and many times simply hanging a broken leg over the end of a table, with a ten-pound weight tied to the ankle, will pull the bones apart enough after a few minutes so that you can push the ends into place. In all these long-bone fractures, if a strong enough pull cannot be effected at once, weight and pulley traction for several days will generally do it.

How accurately do you need to reduce the fracture? This depends upon which bone, and where it is broken. In the middle of long bones, really anatomical position is not necessary, though you ought to try for it, and the bones should be at least partly end-on. In children with broken femurs, even a little overlapping is perfectly allowable, for solid union will always occur, and it is only necessary to prevent angulation and significant shortening, by using ordinary traction. X-rays taken a year later will show hardly a trace of this fracture.

Where the break is near a joint, very good position is necessary; and if the joint surface itself is involved, an absolutely anatomical reduction ought to be obtained. This is especially true of fractures involving the condyles of the humerus, and Cotton's variation of Pott's fracture, in which the posterior half of the joint surface of the tibia is broken across and displaced upward. The matter is serious enough to demand open reduction if need be, for otherwise disability may be very great.

I have just spoken of position; now let me emphasize that alignment must be correct in all fractures, whether or not position is necessarily anatomical. Otherwise, there is bound to be disability, from the joints having to work off-center, and this may be very crippling. Be sure, therefore, that post-reduction films show good axial alignment of the bones of the extremity; and don't forget the matter of rotation. You don't want your patient walking the streets with his feet twisted inward or outward.

The second difficulty is in holding the fracture, once you have gotten it into place. Most times a simple plaster cast is perfectly satisfactory; but remember that casts stay the same size, whereas the limb shrinks, so that the bones may sag completely out of line inside a perfectly good-looking cast, without your being aware of it. If you can, I advise a film taken maybe a couple of weeks after reduction, just to be sure. Even the skin-tight cast of Bohler is not proof against this possibility; and by the way this is a risky cast to use anyway, unless your patient is under the closest supervision.

A good many times, position can best be held by continuing the same traction that served to effect reduction, maybe skeletal traction, and as a variation of this, skeletal fixation, with pins incorporated into a plaster cast. These special devices are not very often really needed.

In maybe 5 per cent of cases, in spite of every effort, the bones refuse to stay in any sort of reasonable position. When this is so, the final resort is open reduction and fixation. This operation requires unusually rigid aseptic technique, with the skin carefully blocked off, and it also requires a working familiarity with simple mechanics. It should not be attempted by the occasional operator, nor by one who cannot change a spark-plug in his car; but there is not the slightest reason why experienced surgeons with some mechanical ability should not be capable of learning the technique of open fixation of fractures. There are three necessary things to watch, in addition to a rigid aseptic technique: first, the fixation should really hold the bones firmly; second, there must be no dead space left, the dressing should be snug, and the skin sutures should be far enough apart to allow some serous drainage; and third, good solid external splintage must be used as well—usually a cast.

The results of open fixation are nothing less than brilliant, in rapidity and sureness of union, and perfection of return to normal function. I assure you that the horrible illustrations in the text-books, depicting the results of this sort of surgery, with assorted bundles of wire, screws, staples and other hardware wrapped around the bones, are not taken from the practice of surgeons of competence and experience.

A third difficulty with fractures is that presented by the soft parts, rather than the bones themselves. Great swelling may interfere with reduction and fixation; arterial extravasation beneath the deep fascia may result in Volkmann's contracture, or even in gangrene unless relieved by incision; and restoration of movements of the neighboring muscles

and joints always gives food for serious thought. In any fracture, if function is delayed in order to be sure of good fixation of the bone, a lot of stiffness may result in the joints, whereas if active use is begun too soon, the fracture may move enough to end in non-union. This is especially true of the humerus. Drop-foot, adduction contracture of the shoulder, and stiffness of the hand, are all prone to occur unless specifically prevented.

Let me now speak for a moment of the most serious group of fractures—compound fractures. There are several ways to treat them; except in clean puncture wounds, they should be debrided somewhat, the bones held in pretty good position, and the wound closed loosely, leaving room between stitches for oozing, and a fairly snug dressing used to obviate dead-space. This is my personal opinion, in which I am in agreement with a number of good men. Sherman plates the bones, and leaves the wound wide open, with Carrel tubes for irrigation with Dakin's solution. Orr packs them with vaseline gauze. Others use skeletal traction. Much depends upon the kind of damage that has been done to the soft parts: sometimes amputation is the only conservative thing to do.

Finally, in treating fractures, do not expect union too soon. If a broken leg has healed so as to allow full duty at ordinary work within four months, it has done very well indeed. If in doubt, be careful about allowing full weight-bearing too early, or bowing may result. This has ruined many otherwise good results, especially in femur fractures.

Please note that I have not discussed the most difficult fracture of all—the fracture of the small part of the neck of the femur; nor the simplest fracture of all—the broken collar-bone, in which my own results are not always by any means perfect. I have much to learn about both these fractures.

In summary, while the general principles are simple, the attending difficulties render the treatment of fractures a rather exacting and intricate branch of surgery.

712 *Botetourt Street.*

CANCER OF THE UTERUS.*

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In the United States of America, nearly 140,000 deaths from cancer occurred in 1935, and one-eighth of these were due to malignancy in the female genitalia[1]. Frederick L. Hoffman in 1934 reiterated his conviction that the world wide rise in cancer mortality represents a real increase although applying chiefly to age groups over sixty and to tumors of the gastrointestinal tract[2]. Female genital cancer deaths per 100,000 population increased from 13.9 in 1933 to 14.5 in 1934, according to the U. S. Census office, the rate being fifty per cent higher in married than in single women. On the other hand Bolduan and Weiner[3], studying New York City deaths from 1901 to 1931, point to the increasing proportion of persons over 45 years of age; and find that while the total cancer death rate has risen, the death rate from *visible* cancers (skin, breast, mouth, and female genitals) is practically stationary, indicating the influence of diagnosis on statistics. At any rate much remains to control a disease which annually claims the lives of 17,000 women in our country.

In the cancer clinic of the Woman's Hospital under Doctor George Gray Ward, we have observed seven hundred and fifty cases of carcinoma of the cervix since radium was purchased in 1919. In the same seventeen years, one hundred and forty-one cases of cancer of the uterine body were treated, giving a ratio of one to five. Malignancy in the vulva, tubes and ovaries occurred much less frequently and until recently received much less uniform classification and treatment. Earlier studies compared the results of irradiation of cervical cancers divided into four histologic groups according as the tumor cells were predominantly adult spinal, transitional, anaplastic spindle, or cylindrical in type. Our findings[4] and similar comparative studies in the literature cast doubt on the prognostic significance of histologic type alone; and we now rely less on histologic radiosensitivity than on observed radio-curability.

*From the Cancer Clinic of the Woman's Hospital.
Read by invitation at a meeting of the Norfolk County Medical Society, Norfolk, Virginia, November 30, 1936.

The latter seems to depend not only on the degree of de-differentiation of the tumor cells, but on the extent of growth when first treated, size of the cell-clusters, and manner of dissemination; and the defense mechanism of the host is weakened by anemia, infection, prolonged inadequate treatment and poor general health. Our material demonstrates the grave prognostic significance of the endophytic spread of both squamous and adenocarcinomata arising within the cervical canal. They are detected late, their extent underestimated, and their treatment often gives disappointing results.

Not only these inverting cancers but the personal equation of the examiners make all clinical classifications open to error. Back in 1907 Wertheim reported parametrial or lymph node invasion in 22 per cent of cases considered preoperatively to be limited to the cervix; while such invasion was absent in 14 per cent of cases where it had been diagnosed. Nevertheless, we continue to use both Schmitz and League of Nations classifications since they demonstrate what is of greatest importance to the medical profession and the public, that uterine cancer in its early stages is curable!

Prophylaxis of Cervical Carcinoma

Much evidence has been given in support of chronic irritation as a contributing cause of cancer[5]. In the female genitalia this has been attributed to trauma from childbirth and instrumentation, and to chemical irritation from prolonged discharges, medications and infection. Prevention would therefore include conservative obstetrics, immediate or intermediate repair of cervical lacerations, appropriate correction of puerperal and infectious erosions and endocervicitis, and total instead of supravaginal hysterectomy for benign conditions where it is technically feasible. Recent emphasis[5] on the considerable proportion (ten to sixteen per cent) of nulliparous women among cervical cancer sufferers, and on the failure of cauterization and repair of the cervix to prevent subsequent cancer in every case, does not—in the opinion of the writer—alter the general rationality of the above measures. More widespread use of prophylactic measures must be accompanied by an appreciation of the dangers[4] inherent in each procedure, some of which—stenosis, cavitation, and malignancy higher up—have been emphasized by Bullard and by Curtis. Without systematic search we have come across three cases of cervical cancer developing respectively three, five, and fifteen years after conservative treatment to the cervix. Despite their oft-quoted rarity we also find four cases (0.6 per cent of the total series) of squamous carcinoma associated with uterine prolapse. And over seven per cent of our cases involve cancer of the hysterectomy stump. (See Table IV).

Prognosis and Treatment

Early detection and early adequate treatment offer the greatest present hope of reducing mortality from cancer of the cervix, as is shown in Tables I and II. Of the "early" cases over one-half can be salvaged for five years and two out of five for ten years; but only one in five "late" cases will survive five years and only one in ten late cases will survive ten years after irradiation. Morbidity and distressing complications are likewise much less frequent in the early treated cases destined to survive as reviewed in Tables V and VI. But cancer education has not yet increased the proportion of early cases at the Woman's Hospital. (Table III). The methods of examination, biopsy, and preliminary supportive and

TABLE I.—FIVE-YEAR END-RESULTS IN CARCINOMA OF CERVIX AT WOMAN'S HOSPITAL
PATIENTS SEEN FROM FEBRUARY 15, 1919 TO MAY 15, 1931

Schmitz Class	All Classes	I	II	III	IV	V	I & II Early	III, IV & V Late
Total Seen	554	14	97	392	48	3	111	443
Irradiated	532	14	97	391	27	3	111	421
Untreated	22	0	0	1	21	0	0	22
Living 5 Years	144	8	51	85	0	0	59	85
Absolute Survival, per cent	25.99	57.1	52.6	21.7	0	0	53.2	19.2
Relative Survival, per cent	27.1	57.1	52.6	21.7	0	0	53.2	20.2

Untraced, counted dead from cancer 14 (2.6 per cent).

antiseptic treatment have been described in previous reports.[6]

TECHNIC OF IRRADIATION

Since uterine cancer cells require from 4 to 6 erythema doses of irradiation to destroy them, every point where they may be growing should receive radium gamma or roentgen rays up to this total. A lethal dose is delivered to the uterocervical exis and a zone about 4 cm. in diameter around it by an intracavitary radium treatment of 2,400 to 3,000 mgm. hrs., and a vaginal or interstitial[16] application of 1,800 to 3,600 mgm. hrs. Our radium barium sulphate in a glass capsule is filtered by a silver tube, brass screen and mineral-free rubber —all equivalent to 1 mm. of platinum. Platinum-iridium needles with wall thickness of 0.5 mm. each contain salt with an effective of 12.5 mgm. radium. In cervical growths the 100 mgm. radium capsule is placed in the cervical canal, and four to six needles implanted in the parametrium to obtain crossfire; but in corpus cancers two 50 mgm. capsules are inserted in tandem into the uterocervical canal. Distance screening of the rectum and bladder is secured by over-distention of the vagina with plain gauze and by using a retention catheter.

The diminishing radium effect in the outlying tissues is supplemented by deep X-ray therapy totalling 2,000 to 2,400 r units to each of four surface portals. Our factors are 200 K. V.-30 m. a.-70 cm.-0.5 mm. of Cu and 1.0 mm. Al., and about 200 r at the surface is delivered in six minutes. Daily doses of 200 to 250 r to each of two portals are designed to compensate for the daily loss in biologic effect; and at the end of the 24 to 30 day treatment period the depth dose at 10 cm. is 30 to 50 per cent of the surface totals; that is, 2 to 3 erythema doses. Over the aortic and inguinal lymph nodes greater effectives can be reached. This protracted fractional dose method has been popularized by Coutard[7] on the theory that it is more destructive to the highly differentiated radio-resistant cell types which divide relatively slowly. Also the vasculo-connective tissue of the tumor bed is better preserved under less intense radiation, and with consequent better nutrition the tumor cells retain their radio-sensitivity. The effect of adjuvant roentgen therapy on our five-year survival rates cannot be ascertained until 1937; but it has produced great improvement in Regaud's results at the Radium Institute in Paris. It requires cooperation and travel expense; and when given before radium its benefits in blocking dissemination and attenuating bacterial infection must be balanced against the delay in application of radium.[8]

Because of the uncertainty of delivering a lethal dose of radiation to the deeper lying parametrial and hypogastric lymphatics, several authorities have recently advocated exposure of these areas[9] by laparotomy or per vaginam, for the implantation of radium needles or radon seeds. We have not done this; but the author favors prompt resort to surgery in suitable cases whose response to adequate primary irradiation is obviously poor.

This difficulty with the parametria underlies the continued advocacy of the Wertheim panhysterectomy by Bonney[10] and Faure. The same philosophy animates the School of Elective Therapy sponsored

TABLE II.—TEN-YEAR END-RESULTS IN CARCINOMA OF CERVIX AT WOMAN'S HOSPITAL
PATIENTS SEEN FROM FEBRUARY 15, 1919 TO MAY 15, 1926

Schmitz Class	All Classes	I	II	III	IV	V	I & II Early	III, IV & V Late
Total Seen	306	3	68	210	25	0	71	235
Irradiated	296	3	68	210	15	0	71	225
Untreated	10	0	0	0	10	0	0	10
Living 10 Years	53	2	27	24	0	0	29	24
Absolute Survival, per cent	17.3	66.6	39.7	11.4	0	0	40.8	10.2
Relative Survival, per cent	17.9	66.6	39.7	11.4	0	0	40.8	10.7
Living 5 Years as of 5-15-31	74	2	35	37	0	0	37	37

Untraced, counted dead from cancer 14 (4.7 per cent).
This table shows that 71.6 per cent (53 in 74) of the 5-year survivors have lived 10 years or longer in spite of the lowered life expectancy of their respective age groups.

by Stoeckel, Lynch, Mikulicz-Radecki[11] and Adler, whereby all technically operable cases are subjected to radical abdominal or vaginal hysterectomy with post-operative radium or roentgen therapy. Their published results indicate a total five-year salvage approximating that of the Irradiation School, but at the expense of a far higher primary mortality (6 to 14 per cent) even in the hands of master surgeons. In a previous paper the author suggested that a series of 108 cases seen in the period ending December 31, 1931, and followed five or more years after treatment. The groups are too small for reliable comparison between the surgical, radiological, and combined methods; but we prefer combined therapy[12] whenever it is possible. At the first operation biopsy and diagnostic curettage are done and the radium tandem inserted for a total of 2,400 to 3,000 mgm. hrs. Roentgen therapy by the protracted dose method

TABLE III.—EXTENT OF DISEASE, BY SCHMITZ CLASSIFICATION, IN TWO GROUPS OF PATIENTS WITH CARCINOMA OF CERVIX UTERI, AT WOMAN'S HOSPITAL

		I	II	III	IV	V	Total
8 years	No.	4	73	249	31	0	357
1919-1927	%	1.1	20.5	69.7	8.7	0	100.
		Early Cases 21.6 per cent		Late Cases 78.4 per cent			
7 years	No.	12	43	216	23	4	298
1928-1934	%	4.	14.4	72.5	7.7	1.3	100.
		Early Cases 18.4 per cent		Late Cases 81.5 per cent			

comparison of the two schools should be made not only on salvage of life but on the basis of the health of patients after treatment; and then presented detailed studies[4] of the complications in irradiated cases. A similar study of the sequelae of surgery and of the recent combined methods will be needed.

Our methods of after-care, monthly inspection in the Follow-Up Clinic, re-radiation of local residua or metastases, study and appropriate treatment of complications affecting the alimentary, circulatory, nervous, and urinary systems have been summarized in previous reports.

follows, and four to six weeks later a panhysterectomy is done. Irradiation is used alone in many of these cases because of advanced age and various medical infirmities. Our absolute five-year salvage of 42.6 per cent and relative cure rate of about 60 per cent by surgery are roughly analogous to the results in Stockholm where Heyman[13] reports absolute five-year cure rate of 44.9 per cent and 47.9 per cent relative cures in the operable group.

TABLE IV.—INCIDENCE AND CURABILITY BY IRRADIATION IN CANCER OF CERVIX FOLLOWING SUPRAVAGINAL HYSTERECTOMY*

Schmitz Class	All Classes	I	II	III	IV	V	Early	Late
Total Seen	54	4	9	34	6	1	13	41
Living 5 Years	19	2	8	9	0	0	10	9
Living 10 Years	5	1	3	1	0	0	4	1

Untreated, one Class IV case. Incidence: 54 in 727 Cases Seen, or 7.4 per cent.
Absolute 5-Year Survival: 19 in 40, or 47.5 per cent. Absolute 10-Year Survival: 5 in 18, or 27.8 per cent.
*Without regard to time elapsing between hysterectomy and first irradiation. This varied from two weeks to 18 years; it was less than 3 years in 24 cases, over 3 years in 30 cases.

CARCINOMA OF THE CORPUS UTERI

There is in the Woman's Hospital material about one case of cancer of the body to five cancers in the cervix of the uterus. Table VII gives the results in

Complications in corpus carcinoma are attributable chiefly to extension of the disease, or medical illnesses so often present in these elderly patients. A cursory survey of 134 cases from 1919 to 1935, inclusive, reveals 127 conditions. Thirteen of these occurring in the gastrointestinal tract include one instance each of rectal bleeding, rectal metastasis,

and intestinal metastasis. One renal and three bladder metastases are included in 35 genito-urinary affections, while pulmonary edema and lung metastasis each occurs once. Circulatory accidents account for eight, perintonitis for five, and pain in various locations for 31 notations; pyometra occurs eight times, severe uterine hemorrhage six times, bone metastases twice and vesicovaginal fistula three times in the follow-up notes. There are 14 miscellaneous affections making up the total of 127 conditions, most of which are concentrated in relatively few patients with medical infirmities or spreading cancer.

As to treatment of complications in cervical or corpus carcinoma, we agree with Jones[4] of Cleveland that each case deserves clinical, laboratory, and X-ray studies, exploratory laparotomy where indicated, and appropriate treatment. Our operative findings and the extensive autopsy studies of Kaplan[14] indicate that in most cases of obstruction in the alimentary and urinary tracts, spreading cancer will be found as the cause. Nevertheless, if we bear in mind Ewing's five factors of malignancy—anemia, infection, toxemia from degeneration, mechanical obstruction and depressed morale—we may combat these factors even in incurable cases by conservative measures and a reasonably optimistic attitude and thus vastly increase our salvage of health.

TABLE V.—COMPLICATIONS IN CARCINOMA OF CERVIX UTERI TREATED BY IRRADIATION
CASES SEEN AT WOMAN'S HOSPITAL FEBRUARY, 1919—APRIL 15, 1935

Complication	260 Cases Seen Before 5-15-25	238 Cases Seen 5-15-25 to 5-15-30	190 Cases Seen 5-15-30 to 5-1-35	All 688 Cases 1919 to 1935
Pyometra	15	28	12	55 (7.9%)
Peritonitis and Sepsis	2	4	4	10 (1.5%)
Intestinal Obstruction	2	11	12	25 (3.6%)
Fistula, Patients	16	27	17	60 (8.7%
Fistulae, Number	20	34	19	73 (10.6%
Hemorrhage, Severe	24	31	34	89 (12.9%)
Rectal Disorders	4	14	24	42 (6.1%
Bladder and Urethra	12	23	32	67 (9.8%)
Upper Urinary Tract Dis.	11	12	16	39 (5.6%
Upper G. I. Tract Disturbance	4	5	5	14 (2.0%)
Blood-Lymphatic Obst.	8	11	10	29 (4.2%)
Nervous Symptoms, Pain, etc.	5	5	16	26 (3.7%)

NOTE: Complications not noted uniformly in earlier cases, in hopeless cases, and cases lost in follow-up. Many duplications as one complication precedes or is an early stage of another.

CONCLUSIONS

1. Present methods of treatment can salvage over one-fourth of *all* cases and over one-half of *early* cases of cancer of the cervix for five years; and respectively *one-fifth* and two-fifths of such cases for ten years. Adjuvant roentgen therapy may be

TABLE VI.—COMPLICATIONS IN CARCINOMA OF CERVIX TREATED BY IRRADIATION
CASES SURVIVING AS OF APRIL 15, 1935

Complication	Survivors Over 10 Years 42 Cases to 5-15-25	All 688 Cases 1919 to 1935	Total 5-Year Survivors 127 Cases 1919 to 5-15-30
Pyometra	4 (9.5%) +	7.9%	9 (7.1%) —
Peritonitis and Sepsis	0 —	1.5%	2 (1.6%) +
Intestinal Obstruction	0 —	3.6%	2 (1.6%) —
Fistula, Patients	3 (7.1%) —	8.7%	11 (8.7%) =
Fistulae, Number	5 (11.9%) +	10.6%	17 (13.4%) +
Hemorrhage, Severe	3 (7.1%) —	12.9%	5 (3.9%) —
Rectal Disorders	0 —	6.1%	5 (3.9%) —
Bladder and Urethra	2 (4.8%) —	9.8%	11 (8.7%) —
Upper Urinary Tract Dis.	2 (4.8%) —	5.6%	7 (5.5%) —
Upper G. I. Tract Disturbance	1 (2.4%) +	2.0%	4 (3.2%) +
Blood-Lymphatic Obst.	4 (9.5%) +++	4.2%	7 (5.5%) ++
Nervous Symptoms, Pain, etc.	0 —	3.7%	1 (0.8%) —

+ Sign means that complication is MORE frequent in survivors than in whole group.
— Sign means that complication is LESS frequent in survivors than in whole group.

expected[15] to add another five to ten per cent to these five-year survival rates.

2. Cancer of the uterine corpus can be cured for five years by combined irradiation and surgery in nearly half of all cases and two-thirds of operable cases in spite of the frequency of medical infirmities in these women.

3. Pending agreement as to the etiology, and as to the value of prophylaxis of uterine cancer, early detection and adequate primary treatment offer the best hope of preventing a large proportion of the annual mortality from cancer of the female genitalia. To obtain early detection, periodic examination of all women once or twice a year by a gynecologist or a physician trained to recognize cancer should be generally adopted.

4. Palliative surgery has proved its usefulness in genital cancer. Early detection and treatment of complications, especially obstructive lesions of the urinary and gastrointestinal systems will not only reduce suffering but prevent needless deaths. Palliative deep roentgen therapy not only retards the spread but relieves the pain of metastases in the bones, ureters, sciatic nerves, and pain due to blockage of the blood and lymph channels.

TABLE VII.—FIVE-YEAR END-RESULTS IN CARCINOMA OF CORPUS UTERI AT WOMAN'S HOSPITAL PATIENTS SEEN FROM JANUARY 1, 1919 TO DECEMBER 31, 1931

	Total	Living 5 Years	Survival Rate Per Cent
Total Seen	108	46	Absolute 42.6
Untreated	7	0	0
Treated	101	46	Relative 45.5
Surgery Alone	21	13	Relative 61.9
Radiation Alone*	59*	21	Relative 35.6
Radiation and Surgery	21	12	Relative 57.1

Untraced 1 case, counted dead of cancer.

*Operation contraindicated in 28 (47.5 per cent) of these because of obesity, high B. P., anemia, diabetes, etc. Two refused operation following radiation.

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FEVER THERAPY IN NEUROSYPHILIS.

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Fever therapy is a relatively new and scientific approach to the handling of neurosyphilis. It imitates nature's process of recovery by elevating the body temperature, and thereby inhibiting or destroying bacterial infection.

Since Von Jauregg, in 1917, first published the result of his treatment of dementia paralitica by the use of malarial plasmodia, there has been much in the literature on the subject. Other types of fever therapy employed have been: the use of relapsing fever in 1920 by Plaut and Steiner; sodoku or rat bite fever by Solomon and others in 1926; the injection of a foreign protein in the form of typhoid vaccine by Kunde, Hall and Gerty in 1927; the use of hot baths in 1929 by Mehrtens and Pouppirt; radio fever therapy, and more lately, the employment of heat to the body in air-conditioned and electrically heated cabinets. King and Cocke in 1930 published the first reported cases of paresis treated by diathermy hyperpyrexia.

Fever therapy was first used with the view of combating general paralysis of the insane, and it was thought in the beginning that this therapeutic measure was not of particular benefit in other forms of neurosyphilis. The indications for this type of treatment in neurosyphilis, however, have extended and we are now able to treat successfully tabes dorsalis, latent neurosyphilis, and other parenchymatous luetic lesions of the brain and spinal cord. The vascular disturbances due to syphilis, however, are not thought to respond as well, and at times the treatment is thought to be dangerous in this type of the disease. Shamberg has shown that rabbits inoculated with syphilis will recover when treated by the induction of artificial fever.

The two types of fever therapy which I shall attempt to discuss with you in some detail are the malarial inoculations and the use of diathermy. These are the most popular and probably the most successful methods of treatment. My personal experience is limited to the former.

There are many who believe that the beneficial effects of malarial therapy have to do not only with the fever-producing mechanism of the disease, but that the toxin of the malarial plasmodium has a definite effect upon the spirochete and the syphilitic processes caused by it. Breutsch and Bahr believe that the good result from the treatment of this disease is due to the malarial toxin, and that the height of the fever has little to do with it. It has been contended that certain patients will show improvement after the inoculation of malarial plasmodia, even though the patient may not have had rises of fever.

The method of producing fever by the administration of malarial blood is to inject about 2 c.c. of the donor's blood subcutaneously or intramuscularly into any part of the body, preferably in the sub-scapular region. It may be injected intravenously, but the "takes" are no more certain. If the patient does develop the disease a chill is to be expected within a few days to two or three weeks. The average is from ten to fourteen days, but one of my cases did not develop a malarial paroxysm until six weeks after the inoculation. In case chills have not developed in the course of eighteen days, Freeman suggests immersing the patient in a cold bath for twenty minutes; giving a subcutaneous injection of five-tenths of a c.c. of adrenalin; or an intravenous injection of one-tenth of a c.c. of triple typhoid vaccine; and sometimes, a prolonged hot bath may bring on a paroxysm.

The disease may run the typical course of the type of malaria used, or the frequency of the paroxysms may change from time to time. Without reason, there may be a cessation of chills and fever for a period of several days, or the paroxysms may entirely cease. It is often more difficult to keep the chills going than it is to cut them short. We let our patients have from ten to twenty paroxysms; the average is about fifteen, depending upon how many hours of temperature over 103 degrees Fahrenheit they have had. Frequently, it is necessary to cut the disease short because of the patient's inability to withstand the severity of the illness. If a patient is not doing well during a series of malarial paroxysms, it is sometimes advisable to give a small dose of quinine to stop the seizures for a time, there-

by allowing the patient to regain certain physical strength. and then the chills may be allowed to continue. After the patient has had the desired number of chills, it is well to cut them short by the administration of quinine, which is given in doses of ten grains, three times a day for three days, then ten grains a day for ten days. During the paroxysms, most drugs should be avoided. Freeman believes that alcohol is the best sedative, and that morphine, hyoscine and the barbiturates may be used.

Bahr and Breutsch reported one hundred cases, of which 5 per cent died during the infection by malaria, and 18 per cent of them died after the malarial paroxysms ceased. In the one hundred and six cases of Bunker and Kirby, thirteen or approximately 12 per cent of them died during or immediately after the malarial paroxysms. Nine or 8 per cent of them died within from two to eleven months afterward. Solomon reports 2.3 per cent mortality, and some others report as high as 10 per cent. It will be noted, therefore, that the treatment of neurosyphilis by malarial therapy is not without danger, even in carefully selected cases. The result of Freeman's studies in the two hundred and five cases in St. Elizabeth's Hospital, treated by malaria, was that 30 per cent of them were improved, 37 per cent were unimproved, 28 per cent died—but not from the malaria—and 5 per cent were untraced. The results of this study compare closely with those made by others using the malarial method of hyperpyrexia. Moore, reviewing 5,000 cases of neurosyphilis, reported in the literature, including both the early and late ones treated by malaria, found that 25 per cent of them had a complete remission; 20 per cent had incomplete remissions with an ability to work; 25 per cent had incomplete remissions but necessitated permanent hospitalization; there was no improvement in 20 per cent; death occurred during or shortly after treatment in 10 per cent. The good results of malaria fever therapy vary in different reports from 8.21 per cent to 62 per cent. It is difficult to compare the results of treatment from various workers because of the difference in the type of cases selected, the stage of the disease at the time of treatment, and because of the factor of personal equation. It is a significant fact that practically all of the reports of the treatment of this disease by malaria are encouraging. Various observers have found that many paretics and other types of neurosyphilis which are not doing well on the arsenicals or other heavy metals will improve on malaria. This has been my experience.

There are certain contra-indications for the use of malaria. Disease of the liver is a serious complication, and malarial therapy should not be employed in those cases; very fat individuals are bad risks, as are those paretics who are subject to convulsive seizures.

The tertian strain of malaria is the one most commonly used. If possible, it should be kept alive from patient to patient by repeated transfers. Citrated blood will keep for about forty-eight hours, and it may be sent by air mail in a radius of a thousand miles.

Cash King and Edwin Cocke, of Tennessee, in 1930 first reported the use of diathermy in the treatment of paresis. They employed a special diathermy machine, capable of withstanding a continuous load of thirty-five hundred to six thousand milliamperes. They used a specially constructed jacket fitted with large electrodes, which is fastened around the patient's chest and abdomen by elastic straps. The patient is carefully wrapped in rubber sheets and blankets, so as to retain the body heat and to absorb perspiration. The electrical current is gradually increased, beginning at zero, and it may be allowed to reach its maximum in twenty to thirty minutes. The temperature rises slowly at first and reaches its maximum in five to six hours. The patient is most uncomfortable during the fever; opiates, hyoscine and other sedatives are resorted to, and the patient may become semi-delirious during this administration of heat. It usually requires from five to seven hours for the temperature to return to normal; after the unpleasantness of the heat for the first few hours has passed, the patient may sleep for several hours; ten to twelve hours is consumed from the beginning of treatment until the patient's temperature has returned to normal. Treatments may be given every day or every other day for a total of ten to twenty but some workers have employed a greater number of treatments.

Neymann and Osborne, with the use of diathermy, reported 66 per cent of their treated cases in clinical remission; 8 per cent markedly improved; with no deaths. Cash King, in a smaller series of cases, had approximately the same results. On the other hand, a larger series of paretics treated by diathermy at St. Elizabeth's Hospital in Washington by Free-

man. Fong and Rosenberg from 1928 to 1932 showed strikingly different results.

They reported that only 20 per cent of their cases improved, 52 per cent of them were unimproved, and 28 per cent of them died during this period. Their bad results may have been due to several factors; namely, that a large proportion of the patients were negroes who had been unsuccessfully inoculated with malaria, and that most of the patients had been previously treated with the heavy metals. They found that convulsive seizures were observed more frequently in the cases treated by diathermy than they were in the corresponding malaria cases. They further brought out the fact that a post mortem on the brains of the patients treated by diathermy did not show the arrest of the syphilitic processes as it did in those treated with malaria; and they discarded this form of therapy after four years, particularly because in their hands it had met with poor success as compared with malarial fever therapy.

Unquestionably diathermy has some advantages over malaria in the treatment of neurosyphilis, though the latter is decidedly more popular, and it is used more extensively in the larger clinics and institutions. The most important advantage in the use of diathermy is that the patient is not being given a new disease, which is in itself often a serious and sometimes a malignant one. Some individuals are immune to malaria and "takes" are not always certain—this being particularly true of the colored race; malarial blood is not always available; the malarial paroxysms may stop spontaneously before the patient has had the desired number of chills; there is no way of controlling the severity of the seizures; and medicinal treatment for syphilis and malaria cannot be given simultaneously.

We are in a better position to evaluate the real benefit of the malarial therapy than of the other methods, because a large number of patients treated by this method have been closely followed for ten years or more. Some of Von Jauregg's cases have been in full remission for more than ten years, and are holding down responsible positions in society. No cases treated by the other methods of fever therapy have existed sufficiently long to compare with them. It may take from six months to three years for improvement to take place in the Wassermann reaction of the spinal fluid or the colloidal gold curve, but the cell count and the globulin reaction is usually lowered within a short time after malarial therapy. Many of these treated patients finally develop negative serology. It is impossible to make a prognosis before treatment.

No matter what fever-producing measures are chosen, it is most important that these cases be treated early. There seems to be considerable disagreement as to the number of paroxysms of malaria or fever elevations which are necessary to secure satisfactory results, but it is generally agreed that fewer than ten will not prove to be of much therapeutic value. Some believe that the patient should have as many fever elevations as can be tolerated, and others are guided by the number of hours of temperature over 103 degrees Fahrenheit experienced by the patient. The frequent failure in the treatment of neurosyphilis is probably due to the lateness of administration of fever therapy, and the small number and short duration of temperature elevations or malarial paroxysms which the patient is allowed.

Professional Building.

THE NON-PADDED OR AMBULANT PLASTER CAST IN THE TREATMENT OF FRACTURES.*

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The bones are the rigid framework upon which the body is built and by means of which it is supported. A fracture is a sudden break at some point in this supporting structure.

One of the fundamental problems in the treatment of a fracture is to provide a substitute for the damaged internal skeletal structure. This substitute must maintain the position of the fragments until healing occurs and function is restored.

All of the methods of treatment available at the present time may be divided into three groups:

(1) External splints made of plaster, wood or metal.

*Read at the meeting of the Norfolk County Medical Society in Norfolk, Va., November 9, 1936.

(2) Internal operative fixation by metal plates, bone grafts, pegs, screws or wire.

(3) Various traction appliances.

There is no one of these methods which is applicable to all fractures. Frequently two of them are used in combination. All three are occasionally used in a single case.

The primary purpose of any treatment should be the restoration of full function in the shortest possible time. There is no single treatment available which fulfills this principle more thoroughly in certain types of fractures, than the non-padded plaster cast, described and used for a number of years by Bohler, of Vienna. This method of fracture fixation is ideally suited to most of the fractures of the leg, and through its use the patient is ambulant almost throughout the healing period. The patient who is treated in this manner is not a sick man, but is a healthy person wearing a splint on his leg (Bohler).

Basically, the substitution of an external splint, such as plaster, for the damaged internal splint, the fractured bone, is sound. It is the imperfections of the padded cast that have brought down so much criticism in the past. Fifty years ago a rigorous campaign was conducted against the use of plaster. It was contended that such immobilization caused severe damage through muscle wasting and stiffness of the joints. Other critics have since held that reduction is not well maintained by plaster; that pressure sores occur; that healing is slow; and that casts are unduly uncomfortable. Much of this criticism has been justified; but the imperfections which called down such criticism have been largely due to improper technique in applying plaster.

The application of a non-padded plaster cast requires a very careful plaster technique. The careless use of plaster without padding invites ischemic paralysis and gangrene. These unfortunate accidents have only too often occurred with padded casts, and have helped to spread the teaching of heavy padding in all cases. Indeed ischemic paralysis is occasionally seen where no cast is used at all. If a few simple rules in technique are followed there will be no such accidents due to plaster.

Only the best grade of dental plaster should be used. It should be rolled by an assistant shortly prior to its application. Commercial ready-prepared rolls of plaster are unsatisfactory. The rolls should be smooth and free from lumps, with the plaster applied not too thickly. When ready for use they are dipped in plain cold water without the addition of any reagent.

The fracture should be accurately reduced before the cast is applied. Reduction can often be carried out most satisfactorily under local or evipal anesthesia. When local anesthesia is used, 20 c.c. of 2 per cent novocaine is injected into the blood clot between the ends of the broken bone under rigid aseptic technique. Only one insertion of the needle is usually necessary for a single fracture, but the process should be repeated for each fracture present. Where the skin is broken or contaminated over the fracture site the injection should be made obliquely through healthy skin. Anesthesia becomes complete in about ten minutes, and is accompanied by complete muscular relaxation. The patient must be warned against the inadvertent use of the injured limb following the anesthetic. Because of the absence of pain, he may attempt weight-bearing or other unnecessary movements, producing further injury to adjacent soft parts.

Following the reduction of the fracture, excessive swelling, if present, should be relieved as much as possible. If this is not done the cast will be too loose and therefore uncomfortable. Swelling may be reduced by gentle massage and elevation of the limb.

The leg should not be shaved or greased. The plaster will attach itself to the hair, holding the cast firmly, but causing no discomfort because of the uniform pull. If grease is applied, the cast loses its grip, and the grease ruins the plaster. The hair of the legs is shed every four or five weeks, so there will be no discomfort from pulling when the cast is removed.

In applying the plaster one flat vertical strip four inches wide is molded to the leg posteriorly and allowed to set for about ten minutes. This strip should always be extended beyond the toes. Three-inch bandages of plaster are then applied, encircling the leg and foot. The plaster is applied smoothly and snugly, but should never be drawn tightly. Wrinkles or lumps are to be avoided, and a depression made by an untrained assistant's hand may render the cast uncomfortable and unsatisfactory. The cast is extended to the tibial tubercle for fractures near the ankle and to the mid-thigh for those higher up. The plaster is always carried down beyond the toes, regardless of the location of the fracture. It should be molded over the bony points with

the finger-tips and over the whole surface with the flat of the hand.

It is in these few simple instructions that the secret of the non-padded walking cast lies. The smoothly applied plaster, carried beyond the toes cannot act as a tourniquet to obstruct the return flow of blood, and swelling seldom occurs if the cast is thus applied.

When the plaster hardens an iron stirrup is attached to the cast to aid in walking. The leg is then elevated for twenty-four hours, and observed for any circulatory disturbance. At the end of this period the patient is allowed to walk. A walking cane may be necessary for the first day until he learns to use the cast. After this he walks unaided, without pain or discomfort. He may be allowed to return to his home or to go where he sees fit until the fracture heals. Instructions are given, of course, to return in case of any discomfort, and to report every few weeks for observation.

The time necessary for firm healing depends on the location and type of fracture but the cast should not be removed until solid union has taken place. When union is complete and the cast is removed a desirable contrast to the limb which has been treated in a padded cast is evident. The skin is firm and healthy, without abrasions. If ulcerations were present when the cast was applied they are usually found to be healed. The muscle tone is excellent and there is very little stiffness in the joints. A prolonged period of treatment with exercises and physiotherapy to regain function is unnecessary.

There are obviously several types of fractures in which external splinting with plaster is not adequate to maintain reduction. The oblique and comminuted fractures of both bones of the leg are among this group, and here a modified technique such as the following may often be used.

Under spinal anesthesia 3/16-inch Steinmann steel pins are driven through the upper and lower ends of the tibia. There is some danger of splitting the bone if the pins are placed too far down on the shaft. The fracture is then reduced by means of traction. It is usually best to maintain traction in this type of case for a week or ten days, until most of the initial reaction has subsided. A non-padded plaster cast is then applied to incorporate the pins, and the patient allowed to walk in twenty-four hours. In six to eight weeks, if union progresses well, the pins may be removed and a simple walking cast applied. These fractures are sometimes notoriously slow to heal when situated in the middle third of the leg and the pins may be left in for as long as six months if necessary.

During the past five years I have applied over 400 non-padded plaster casts after the technique described, in Marine Hospitals in Savannah and New Orleans. This is too small a group from which to draw any sweeping conclusions. The results have been gratifying, however, and we feel that this method is a valuable adjunct to the treatment of fractures. More than 90 per cent of our fractures of the leg and foot have been treated with walking casts, to the exclusion of any other treatment. We have had no single instance of circulatory disturbance due to the cast. There has been one case of pressure sore. This was due to a dent in the plaster made by the thumb of an assistant, and overlooked at the time of application.

The advantages of the non-padded walking cast may be summarized as follows:

(1) The patient is more comfortable because the fragments are held firmly in position.

(2) Pressure sores are prevented because the pressure is evenly distributed over the whole surface of the leg. Furthermore, there is no padding to roll up and form lumps, leaving bony prominences exposed, and thereby actually causing pressure sores by its presence.

(3) The patient is ambulant throughout the course of treatment. The economic value of this feature cannot be overlooked.

(4) Healing time is decreased through the stimulation of walking and the increased blood supply to the parts.

(5) Stiffness of joints and atrophy of muscle is prevented because these structures are in constant use.

(6) And last and most important the reduction is maintained more perfectly, because there is no excess room in the cast and angulation and slipping of the fragment is minimized.

U. S. Marine Hospital.

CARCINOMA OF COLON IN CHILDHOOD—REPORT OF CASE.*

HARRY J. WARTHEN, M. D.,
Richmond, Va.

Bessie B., a fourteen year old colored female, was referred to Saint Philip Hospital by Dr. M. H. Eames, of Providence Forge, on September 7, 1936.

Her chief complaint on admission was recurring colicky pain in the upper abdomen and obstinate constipation.

Family History: The parents were living and in fair health, although her mother was said to have hypertension and her father had been treated for heart trouble. The patient was one of twelve siblings. Two sisters had died in childhood—one of heart disease and the other from unknown causes. A brother had arrested tuberculosis. There was no further family history of constitutional disease.

Past History: The patient's general health had been good. She had always been a mouth breather and was subject to recurring upper respiratory infections. Pyorrhea alveolaris had been present since the age of twelve.

The present illness began in May, 1936, when the patient noticed that about one hour after the midday meal she would experience a sensation of fullness and at times a transient mass would appear in the epigastrium. Early in the illness these symptoms could be ameliorated by soda, but later she found that simple measures failed and actual pain in the epigastrium followed the taking of any food. About three weeks before admission vomiting occurred and this became increasingly frequent despite a diet which consisted chiefly of milk and orange juice. The vomited material at first contained food particles, but latter consisted of duodenal contents. The patient became increasingly constipated and stated that she had only one bowel movement during the three weeks preceding her admission. She had lost twenty-eight pounds in weight during the past four months.

Physical examination showed a well developed but definitely dehydrated mulatto girl who appeared several years older than the stated and verified age of fourteen.

The most outstanding finding was an ovoid, definitely distended abdomen. The distention was not symmetrical, for the lower abdomen was more prominent than the upper. This state of affairs was not constantly true for at more or less regular intervals a large loop of distended bowel would appear in the right upper quadrant and a peristaltic wave could be seen crossing the upper abdomen towards the left. This activity was preceded by a colicky pain and followed by a high pitched gurgle.

Palpation of the abdomen revealed a firm, spherical mass extending from the midline to the left costal margin and filling a considerable portion of the left upper quadrant.

Routine laboratory studies showed a moderate secondary anemia. The hemoglobin was 75 per cent (Sahli) and the erythrocyte count was 4,120,000. The white blood cells numbered 10,200 with 82 per cent polymorphonuclears. The urinalysis was not remarkable and the Wassermann and Kline reactions were negative.

A fluoroscopic and roentgenographic examination in the semi-erect position showed the lungs to be clear and the diaphragm normal in position and excursion and free from subphrenic air. Several loops of small bowel were distended with gas, suggesting intestinal stasis.

The patient was given an intravenous infusion of 5 per cent dextrose in normal saline solution and a gastric lavage released about 100 c.c. of bile tinged fluid.

A provisional diagnosis was made of intestinal obstruction, probably due to tuberculous peritonitis. The patient was operated upon under spinal anesthesia on the day of admission. An upper right rectus incision revealed an obstructing lesion of the midtransverse colon with marked dilatation of the proximal large bowel and the terminal ileum. The obstruction was due to an encircling tumor which was adherent to the falciform ligament anteriorly and the retroperitoneal structures posteriorly. Metastatic nodules were present on the nearby colon and adjacent omentum. An omental nodule was excised for microscopic examination. A frozen section showed signet ring adenocarcinoma grade four by the Broder's classification (Figure 1). Immediate extirpation of the involved bowel, though highly desirable, was obviously impossible because

*From the Department of Surgery, Medical College of Virginia, Richmond, Va.

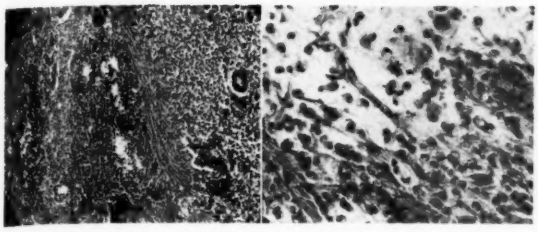

Fig. 1-a. Low power photomicrograph showing adenocarcinoma with formation of glands.

Fig. 1-b. High power photomicrograph showing signet cells.

of the surrounding secondary infection and the superimposed acute obstruction. In order to relieve the immediate symptoms a cecostomy was made through a right McBurney incision and the wounds were closed.

The cecostomy drained freely and the condition of the patient improved.

On September 26 the patient was again operated upon through an upper left rectus incision. Despite the diversion of the fecal current and the relief of the acute obstruction with a corresponding decrease in the infection surrounding the tumor, the carcinoma appeared more extensive than at the time of the first operation nineteen days previously. The pancreas contained tumor and the adjacent stomach, jejumum, omentum, gastrolienal ligament and the glands about the aorta were also involved. Under

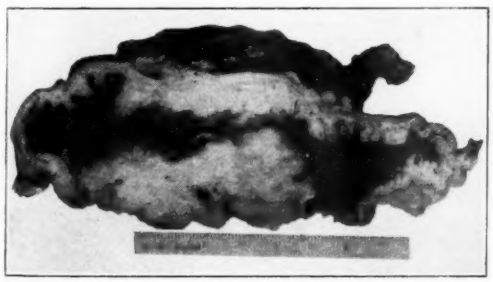

Fig. 2. Excised segment of transverse colon containing tumor. The lumen of the bowel is almost completely occluded by the encircling growth despite the diversion of the fecal current by a cecostomy nineteen days before resection of the carcinoma.

these circumstances a palliative procedure alone was indicated to restore the continuity of the bowel and to permit the closure of the fecal fistula. An obstructive resection was done with the Rankin clamp and a segment of bowel containing the primary tumor was excised (Figure 2). The clamp was removed on the sixth post-operative day, and the proximal loop drained freely.

The patient was given six deep X-ray treatments between October 19 and 27 by Dr. F. B. Mandeville. Three abdominal portals were used—one anteriorly which measured 20x20 cms. and two posteriorly which measured 14x14 cms. each. One thousand roentgens were given through each portal, using 200,000 volts with 0.5 mm. copper and 1.0 mm. aluminum.

On October 29 a crushing clamp was applied to the septum between the adjacent loops of divided bowel. Seven days later the spur separated and the continuity of the bowel was restored.

On November 12 a third and final operation was done in order to close the cecostomy and transverse colostomy. The mucosa was separated from the skin margins and the openings in the colon were closed. The bowel was replaced in the abdominal cavity and the skin was loosely approximated with silver wire sutures. A small fistula reopened at the site of the transverse colostomy, but this was closing on November 21 when the patient was discharged from the hospital.

On November 27 the patient returned to the Out-Patient Department for a check-up examination. Her general condition was improving and she was free from abdominal symptoms.

COMMENT

Carcinoma of the colon is relatively rare in childhood and young adult life. When present, this condition usually occurs in the rectum or sigmoid.

Walker and Daly[1] reviewed the literature in 1934 and found only ten proven cases of carcinoma of the upper colon in children under fifteen years of age. Their series follows:

AUTHOR	YEAR	SEX	AGE	LOCATION
Maydl	1883	F	12	Caecum
Maydl	1883	M	13	Caecum
Burger	1893	M	15	Ascending colon
Mayo-Robeson	1895	F	14	Ascending colon
Nothnagel	1898	M	12	Caecum
Ruczynski	1904	M	13	Splenic flexure
Muralt	1913	M	13	Ascending colon
Wainwright	1925	F	11	Splenic flexure
Chajutin	1929	F	14	Caecum
Walker-Daly	1933	M	5	Caecum

The following year Pfeiffer and Wood[2] reported a carcinoma of the transverse colon in a seven year old boy. In 1936 Ogilvie[3] described a mucoid carcinoma of the cecum in a boy thirteen years of age.

The present case is the thirteenth recorded example of a carcinoma of the upper bowel occurring in a child less than fifteen years of age and only the

second instance of such a carcinoma arising in the transverse colon.

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Medical Arts Building.

HYSTERICAL DYSPHAGIA: REPORT OF A TYPICAL CASE.*

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and
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There has been considerable controversy as to the accuracy of the term "hysterical dysphagia" in describing a type of difficulty in swallowing that is associated with hypochromic anemia, a glazed and fissured tongue, cracks at the corners of the mouth, and enlargement of the spleen.

While it is true that the changes in the mucous membrane of the mouth and esophagus may occur as the result of anemia and secondarily produce dysphagia, in the majority of cases the difficulty in swallowing evidently antedates the development of anemia, the changes in the blood occurring as the result of dietary restrictions. Whether the anemia or the dysphagia is the initial cause of the syndrome, however, is of little consequence as far as the character of the symptoms is concerned, for when the condition is once established, fear of choking is the predominating symptom. The following typical case will emphasize this fact, and the dramatic result that followed the passage of a sound through the esophagus will provide further evidence that the symptoms were largely functional in character and that the condition is fairly accurately described by the term "hysterical dysphagia."

The patient was a woman fifty-three years of age. She said that six years previously difficulty in swallowing solid foods had developed. Her main difficulty appeared to be fear of "strangling" when she attempted to swallow a bolus of food. Solid foods, and especially meat, seemed to "stick" in the region of the pyriform sinuses; consequently, she would grind all meat before cooking it and in this way was able for a while to eat with only moderate difficulty. The dysphagia had progressed, however, and for three years the patient had not been able to swallow

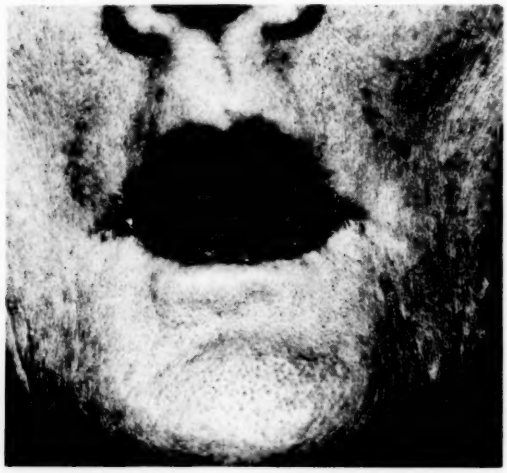

Fig. 1.—Bilateral fissures in angles of mouth.

Fig. 2.—Marked atrophy of lingual papillae and glossitis.

*Submitted for publication November 12, 1936.

meat in any form. She said that the curds in buttermilk had caused so much trouble that she would dilute and then strain the buttermilk before ingesting it. The seeds in strawberry sauce "would feel hard and cause the sensation of an electric shock" when they came in contact with the mucous membrane in the region of the pyriform sinuses, so that this also had to be strained. All medications had to be in solution before she could take them, since even small tablets and capsules could not be swallowed.

The patient's diet at the time of examination consisted of finely mashed potatoes, gravy, bread and milk, strained buttermilk, strained fruit juices, finely mashed sardines, and cake. She had lost twenty-five pounds (11.3 kg.) in these six years, and, she estimated, at least half her strength; lifting and carrying a pail of water a short distance would "tire her out for the rest of the day."

On physical examination the patient appeared pale and asthenic. She had fissures at the angles of her mouth (Fig. 1), and there was marked atrophy of lingual papillae and glossitis (Fig. 2). The spleen was not palpable.

Laboratory findings revealed marked secondary anemia, the value for hemoglobin being 6.8 gms. per 100 c.c. and erythrocytes numbering 3,750,000 per cubic millimeter of blood. The blood smear was typical of marked hypochromic anemia. Gastric acidity was within normal limits. Roentgenologic examination of the esophagus gave negative results.

A number forty-one French sound was passed without obstruction through the esophagus into the stomach over a previously swallowed silk thread which served as a guide; the patient was immediately able to eat solid food, with no discomfort other than the soreness existing in the hypopharynx incidental to instrumentation.

CARCINOMA OF THE SIGMOID AND RECTUM: COMMON DIAGNOSTIC ERRORS WHICH ARE READILY AVOIDABLE: CASE REPORTS.*

A. STEPHENS GRAHAM, M. D.,
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Observations on this occasion will be limited to a consideration of the two features which in my experience have most frequently given rise to confusion in the establishment of a diagnosis of carcinoma of the sigmoid or rectum: the passage of bright red blood at stool and persistent diarrhea, the so-called compensatory diarrhea which exists in the face of almost complete obstruction of the large intestine.

There are no pathognomonic symptoms of cancer of the large bowel. The onset of symptoms usually is insidious and these may simulate symptoms of various other intra-abdominal lesions. For this reason early diagnosis can be accomplished in a high percentage of cases only if a thorough examination is made whenever a patient in the middle decades of life complains of symptoms referable to the gastrointestinal tract, such as, diarrhea, gradually increasing constipation, alternating constipation and diarrhea, bright red blood at stool, or other symptoms even though vague in nature, especially if the symptoms persist over a period of two or more weeks. To wait for the appearance of the classical text book symptoms of abdominal malignancy, such as marked loss of weight and strength, profound anemia, palpable masses, and severe pain, is merely postponing the diagnosis until generalized metastasis has occurred and there is no hope for a cure. An adequate examination in suspected colonic malignancy should consist of: (1) digital examination; (2) sigmoidoscopic examination; and (3) roentgenoscopic studies of the colon after barium enema, in the order named. It is most fortunate that, for the cases under consideration, examination with the finger and the proctoscope will suffice in approximately 95 per cent of instances.

Failure to recognize the presence of bright blood at stool as the most constant sign, and often the only one, of cancer of the left half of the colon is of frequent occurrence. Of 32 consecutive cases of carcinoma of the rectosigmoid and rectum, operated on by me during the past three years, 10 (or 31.25 per cent) were treated for bleeding hemorrhoids prior to a diagnosis of cancer but during the period in which symptoms of the cancer were

*Read at the sixty-seventh annual session of the Medical Society of Virginia in Staunton, October 13-15, 1936.

present. Yet in 6 of these cases a growth could be palpated with the finger, in 3 others it could be observed through the sigmoidoscope and a specimen obtained, and in the tenth case the defect caused by the lesion was readily visualized roentgenoscopically. It is instructive to examine these 10 cases a little further; 5 were inoperable and only palliative procedures were possible, yet of the other 22 cases only 6 were inoperable. Obviously the delay in reaching a correct diagnosis in the group subjected to treatment for bleeding hemorrhoids influenced unfavorably the operability in this group. In the following two cases the primary complaint was the passage of bright blood at stool:

Case I. A man, aged 42 years, was admitted to the Stuart Circle Hospital on January 19, 1935, with a diagnosis of carcinoma of the rectosigmoid. He had enjoyed excellent health until June, 1934, at which time he noted gradually increasing constipation. Two months later he noted bright blood at stool, for which he consulted a physician. In September, a hemorrhoidectomy was done for bleeding piles. In October he commenced passing small quantities of soft fecal material tinged with blood. When I first saw the patient, eight months after the onset of symptoms, he still noted the daily blood streaked stools. There were no other symptoms; no loss of weight and the concentration of hemoglobin was 82 per cent. Proctoscopic examination revealed an annular carcinoma, situated 12 cubic centimeters from the anal margin. A biopsy obtained at this time demonstrated adenocarcinoma, graded 2. Because of his splendid general condition and age, a one stage combined abdominoperineal resection of the rectum and sigmoid was done and his recovery was uneventful. Fortunately this patient was not one of the group of five inoperable cases just mentioned. It will be noted, however, that operation was postponed five months longer than probably was necessary by the original diagnosis of bleeding piles.

Case II. Less fortunate was the patient whose case report follows: October 2, 1936, a man, aged 44 years, was admitted to the Stuart Circle Hospital with a history of having passed bright blood at stool for a period of nine months and of gradually increasing constipation during the following five months. Eight months previously he consulted his family physician who made a diagnosis of bleeding piles for which an ointment was prescribed. The examination was limited to the anal canal. Several weeks prior to admission to the hospital, after the passage of what was described as a considerable quantity of bright blood, the patient was sent to a proctologist who discovered an annular obstructing growth just within reach of the examining finger. Biopsy obtained through the proctoscope revealed a grade 3 colloid carcinoma.

Despite the fact that he had lost no weight and the concentration of hemoglobin was 103 per cent, exploration of the abdomen on October 5, 1936, revealed wide-spread lymphatic and hepatic involvement. Because of impending total obstruction, a palliative colostomy was established. Sixty-two per cent of my inoperable cases, as determined by abdominal exploration, were of this type.

The *next case* illustrates an error which one is very apt to make when the predominating symptom is that of diarrhea. Five (or 15.62 per cent) of the 32 cases mentioned above were of this type. The following is a typical case:

A woman, aged 51 years, was admitted to the Stuart Circle Hospital on March 24, 1936, with a diagnosis of chronic ulcerative colitis. Eleven months previously she commenced suffering from diarrhea consisting on an average of ten daily rectal discharges of feces, mucus and blood, and this had persisted more or less up to the time of my first examination. During the same period she suffered intermittent abdominal cramps, the severity of which began to increase markedly about the ninth month of her illness. The character of these cramps is interesting when considered in the light of the subsequent finding of almost complete obstruction at the rectosigmoid. The pain commenced just above the umbilicus and radiated to the left lower quadrant of the abdomen; it increased in crescendo fashion and quickly reached its peak. After a few moments the patient experienced a sensation as if something was "giving away," coincident with which she could feel with a hand a sausage like mass in the left side. Undoubtedly this was the rebound of a peristaltic rush which initiated reverse peristalsis in the sigmoid and descending colon. The other symptoms were gradual loss of weight (21 pounds) and strength; she had been bedridden for six weeks prior to admission to the hospital. Several months previously, during a short stay in her local hospital, practically every laboratory test that could be desired had been made, including a complete gastro-

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intestinal roentgenologic study and a basal metabolic examination. The significant findings were: Hemoglobin, 63 per cent and a roentgenologic diagnosis of probable regional chronic ulcerative colitis of the descending colon. As for treatment, various regimes for chronic ulcerative colitis, including Bargen's specific vaccine, were tried but without evidences of improvement in the patient's condition. In fact, the patient continually lost ground and was quite debilitated when first observed by me. The one examination which had not previously been made, namely, a sigmoidoscopic study, enabled us to arrive at a diagnosis of an annular, ulcerating carcinoma situated at the rectosigmoid. A biopsy of this growth revealed an adenocarcinoma, graded 3. The stenosed lumen at the site of the lesion barely admitted an 18F catheter, inserted for the purpose of decompressing the almost totally obstructed bowel by means of irrigations.

Since it is not my purpose to discuss surgical measures I will state only that at the operation for relief of obstruction, the entire descending colon and a long redundant sigmoid were found markedly distended and hypertrophied, being filled with firm putty-like material, except for a small segment of sigmoid just proximal to the obstructing lesion. In this segment the material was fluid in nature, due evidently to the breaking down of solid feces by bacterial action.

A similar clinical picture may result from the taking of gradually increasing quantities of laxatives. Only the other day a patient denied being constipated yet she was almost completely obstructed from a growth in the sigmoid. She finally admitted that for a period of several weeks, some six months previously, progressively increasing constipation was noted for which she commenced taking laxatives. Recently she had been taking large quantities frequently. Many such cases are observed in which extensive treatment has been instituted for "chronic ulcerative colitis," "amebic dysentery," "mucous colitis," or "spastic colitis." One patient of mine was treated for all these conditions and at one time or another took emetine, quinine, yatren, resorcin, and stovarsol before a diagnosis of carcinoma of the rectosigmoid was made with the proctoscope.

It will be observed that in my surgical series approximately 50 per cent of the cases were originally incorrectly diagnosed bleeding piles or colitis yet only two required diagnostic measures not available to every physician.

Medical Arts Building.

DISCUSSION

DR. R. DUVAL JONES, Norfolk: Dr. Graham has called our attention to a fact which to those of you who have never worked on large service devoted to diseases of the colon and rectum must seem not only amazing but deplorable, i. e., that carcinoma of the rectum and rectosigmoid, which should be one of the most readily diagnosed pathologic conditions of the large bowel, is often entirely overlooked until the lesion is far advanced, and the chance of effecting a permanent cure is practically *nil*. Furthermore, when one stops to consider that carcinoma of the rectum and sigmoid is slow in its growth, late to metastasize, and when detected early, is quite amenable to surgical treatment, it seems even more unfortunate.

However, the entire blame cannot be placed upon the physician. As Dr. Graham has emphasized, carcinoma of the rectum and sigmoid in its early stages is an insidious disease. Symptoms seldom occur early, for one of three things must take place in the production of symptoms: (1) the lesion ulcerates and becomes secondarily infected or causes hemorrhage; (2) by encroachment upon the lumen of the bowel, partial obstruction is produced; or (3) by extension through the normal confines, it becomes attached to other viscera or makes pressure upon a nerve which causes pain. When symptoms do occur, they are usually so mild in character at first that for a considerable time the average patient is apt to attribute them to some minor disturbance, as hemorrhoids, constipation due to sedentary life, or some dietary indiscretion. When the patient finally consults a physician, symptoms are often so mild that unless the physician himself is "colon minded" he too, not infrequently, fails to insist upon necessary investigations and again the discovery of the neoplasm is postponed.

In reviewing a large series of cases with Dr. Rankin in 1928, we found that the average duration of symptoms in cases coming to the Mayo Clinic was 11.7 months, and that a considerable number of these had been operated on for hemorrhoids or given some type of local rectal treatment after the onset of symptoms. Such observations as these, and the cases which Dr. Graham has reported, emphasize the fact that whenever a patient complains of even a moderate change in bowel habit which does not become adjusted within a short time under ordinary treatment, a rectal examination should be performed. If this fails to reveal a lesion, sigmoidoscopic and roentgenologic examination should be carried out. By such means only can we hope to detect carcinoma of the rectum and rectosigmoid in an earlier stage of development and thus offer the patient a more favorable prognosis.

XUM

THE EARLY MANIFESTATIONS OF CARCINOMA OF THE CERVIX, With a Discussion of the Pathological Findings.*

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One must still write with a gloomy outlook about the epithelial tumors affecting the uterus. One-third of the cancers affecting women develop in the uterus, and 90 per cent of these originate in the cervix. Carcinoma of the cervix stands forth as a scourge that medical science has been impotent to modify or to check. It kills women at their highest period of responsibility, activity and usefulness.

Unquestionably, more attention is being paid to scientific grouping and histological classification. It is also certain that modern diagnostic skill is far superior to that of twenty years ago. Yet statistical studies show that the number of women succumbing to malignancy is on the increase.

The early diagnosis of carcinoma of the cervix is very difficult because there is relatively little pain. Symptoms are absent in the beginning of the growth. The discovery of the carcinoma nodule, which is a very early sign, is rather difficult in the beginning. Only in exceptional instances is the disease discovered in this stage, hence the condition goes on unnoticed for a considerable period of time. Usually, when first seen, it is already productive of symptoms and fairly well advanced, thus affording us a good excuse for the lamentably poor results of average treatment.

Gynecologists agree that if cancer of the cervix could be diagnosed in its symptomless stage, a cure would be possible. The physiologic history as well as the injuries and chronic inflammation to which the cervix is particularly exposed after parturition are no doubt the chief contributing factors for abnormal and atypical growths.

I believe, in addition to this, the histological structure of the cervix with its two types of lining epithelium and tendencies of interchangeability between the two, introduces into the tissue a susceptibility to cell disturbances and atypia.

We must bear in mind certain facts, in order to understand the development of cancer. These are as follows:

1. Cancer does not start in healthy tissue.
2. There is a focus or area, the cells of which at first are not malignant.
3. Irritation, usually chronic, acts upon this area of cells and produces the characteristic changes of malignancy.

In the early diagnosis of carcinoma of the cervix, our study must be divided into the following:

1. Signs and symptoms.
2. Macroscopic appearance.
3. The growth.
4. Microscopic findings.

The macroscopic picture of early carcinoma is, in its various stages of development, nodule, ulceration, papilloma and cauliflower growth. The cancer nodule does not cause symptoms; therefore it is difficult to recognize because benign nodules are more frequently seen than malignant ones. A malignant nodule is hard, and indurated in the wall of either the anterior or posterior cervical lip.

A sign which may be of great assistance in the early investigation of the nodule is the Chroback Clark sign, although it may be only presumptive. The sign is: if a nodule is touched with a dull, pointed instrument and bright red blood appears, and the bleeding continues for some time, we are justified in assuming that cancer is probable. A positive diagnosis rests upon the immediate excision of the nodule within the surrounding healthy tissue, and submitting this for microscopic study.

The cancer ulcer and papilloma are also difficult to diagnose because ulcers and papillomas are more frequently benign than malignant. Ulceration of the nodule results from a peculiar tendency of central carcinoma cells in the nodule to degenerate. This degeneration is due to poor blood supply. The papilloma tends to grow outwardly. Sometimes a circumscribed ulcer in the cervical lip or canal is first recognized. Here also the central cells degenerate. Such small ulcers and papillomas bleed when touched, and so we have here a very valuable symptom which we call contact bleeding. In some cases, the tumor is found as a more or less diffuse papillary growth, springing from the lips or projecting from the cervical canal. This is the early or incip-

*Read before East Flatbush Medical Society, October 14, 1936, in Brooklyn, N. Y.

ient stage. So, the first and exceedingly important symptom of cancerous tumor, in its early stage, is contact bleeding. If such a symptom is present, a diagnostic excision should be made, with healthy tissue included, and submitted for microscopic study.

Usually, the early symptoms are overlooked. Only when the symptoms are fairly well advanced are they recognized. At the fairly advanced stage, the picture is different. There we see the following:

1. A marked enlargement with granulation and induration of the cervix,
2. A large excavated ulcer, or
3. An extensive papillary or cauliflower mass spreading over the lips.

When a cervical erosion becomes chronic or heals, a transition zone between vaginal and canal mucous membrane forms, in which nodules or erosions may be seen. Such changes may become or are atypic, and hence forerunners of carcinoma. Transition zones are present in about 70 per cent of such examinations. They are desquamated areas devoid of squamous epithelium, and may be recognized by the Schiller Test.

Schiller Test: A simple test has been devised by Schiller to distinguish the normal from the diseased cervix. The test is based upon the fact that normal squamous epithelial cells contain glycogen and stain a uniformly deep brown after the application of compound solution of iodine (Lugol's), whereas diseased areas of the cervix and the normal glandular epithelium of the cervical canal mucosa do not stain with Lugol's solution, hence remain pinkish in color. A uniformly deep brown discoloration of the squamous epithelium assures one that cancer of the vaginal portion is not present. Defects in the coloration may be due to the following:

1. Carcinoma.
2. Erosion.
3. Loss of surface epithelium due to trauma.
4. Ectropion or eversion of the glandular cervical canal epithelium.
5. Syphilitic or tuberculous ulceration.
6. Leukoplakia.

The presence of unstained patches after the application of Lugol's solution requires the removal of tissue with a very sharp curette; or, if this cannot be done, an excision of the area should be made. The tissue must be submitted for microscopic examination. Aplasia or atypia of the cells means cancer. In performing a biopsy for a suspected or an early cancer, the entire nodule with adjacent normal tissue should be removed. It is dangerous to cut into a nodule.

If physicians would become more cancer-minded, that is, keep in mind the possibility of the presence of malignant disease in chronic tissue changes, more biopsies would be performed for diagnostic purposes and these would be submitted to microscopic study without delay.

Etiological Factors:

The Adult Period: During menstruation, the cervix is unchanged. In pregnancy, the connective tissue becomes softened and the muscle fibres become longer, with cervical glands secreting more mucus.

Although pregnancy in itself does not materially alter the cervix, the after-effects of parturition are very important and far reaching as regards the genesis and development of cancer.

Most cervical lacerations become infected and produce a cervicitis with its consequent evils—a leucorrhea, eversion, ectropion, erosion, hyperplasia of the epithelium, and gland and cyst formation.

Cancer of the cervix is most common in multiparous women, and lacerations of the cervix along with commonly associated inflammatory lesions are generally considered to be its forerunners. By careful pelvic examination, one will find a cervicitis in 80 per cent of women, with its consequent evils. Some observers are convinced that infections and inflammations are more important than lacerations and scars as factors predisposing to the development of cancer. Curtis believes that strictural obstruction of the cervix, due to faulty cauterization or operation, may sometimes be a factor in the etiology of endocervical cancer.

Cervical polypi may, as a result of irritation, produce cancer. Some observers believe it is possible to make a certain diagnosis of benign or malignant polyp from a histological picture of the lesion. In one per cent of cases, the polypi are complicated by cancer.

ANATOMICAL CLASSIFICATION OF CARCINOMA OF THE CERVIX

1. *Carcinoma of the vaginal portion,* sometimes called portio—that portion between the external os and the vaginal wall.
2. *Carcinoma of the cervical canal.*

Due to the frequency of cervical lacerations with erosions, morphological changes of the epithelium of the portio and endocervix must inevitably occur.

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The clinical and histological classifications of carcinoma of the cervix is:

1. *Squamous cell cancer of the cervix* which is confined to the vaginal surface of the cervix. Here, we find a tumor extending on the surface, forming a large fungating cauliflower-like mass which projects into the cavity of the vagina. This variety arises usually from the lip of the external os and shows a little tendency to invade the deeper tissue. It is therefore of limited malignancy, although alarming in appearance.

2. *Glandular or cylindrical cell or adeno-carcinoma of the cervical canal.* This growth extends deeply in the direction of the internal os, causing an enlargement of the cervix, and eventually produces a deep, ragged, crater-form cavity, lined with crumbly sloughing debris which bleeds at a touch. This is the commonest, and at the same time, the most malignant form. Both types frequently meet and intermingle.—(Ewing).

There is a third variety, + the least common form, where a flat, indurated ulcer is produced, which tends to spread superficially and is of comparatively slow growth. It is found chiefly in elderly women.

EROSION, ENDOCERVICITIS AND CYSTIC DEGENERATION

Pathology. I believe that a clear understanding of the pathology of the above named conditions is very important in order to differentiate between them and cancer.

In the majority of cases, endocervicitis is caused by a chronic pyogenic infection, resulting from a laceration of the cervix during labor. After delivery, the normal resistance to infection is reduced because the genital tract has been subjected to trauma and the normal acid reaction of the vagina has been rendered alkaline by the passage of the lochia.

As a result of infection, inflammation sets in. The stroma lying deeply adjacent to the epithelium becomes edematous and there is an exudation of lymphocytes and plasma cells. The blood vessels dilate and the cervical glands become distended and pour out a copious secretion of mucopurulent character—leucorrhea, usually an indication that the cervix is infected. The squamous epithelium surrounding the external os is elevated and devitalized by the more deeply seated edema. As a result of this condition, a portion of the epithelium undergoes desquamation and a raw area is left surrounding the external os. In the process of time, this raw area is covered by the columnar epithelium of the cervical canal and presents a somewhat red appearance, this condition being known as an *erosion.*

Usually the infection penetrates deeply into muscular layers, causing a chronic inflammatory hypertrophy. When the inflammation subsides, it is followed by atrophy and development of fibrous tissue which gives the cervix a nodular and shrunken appearance.

The down growth of columnar epithelium from the cervix is actually the first step in the process of repair, the second being an attempt of the squamous epithelium to regain its former position around the external os.

The deepest layer of squamous epithelium burrows under the invading columnar epithelium and causes a desquamation of the latter. The process of regeneration may succeed to a certain extent, but not to the extent of evicting the racemose glands which remain on the eroded areas. Their ducts become plugged, secretion accumulates, and minute cysts are formed, or a cystic degeneration of the cervix takes place.

Several authorities hold that an erosion can become cancerous through overgrowth of new squamous epithelium. I believe that the erosion that is accompanied by a deep cervical laceration, by thickening and eversion of the lips, and histologically by abundant round cell infiltration, is most likely to become cancerous.

The cervix is a restless tissue and exceptionally liable to take an atypical growth, due to the possession of two easily interchangeable forms of epithelium.

Healy does not find the gross appearance of early carcinoma of the cervix typical, and admits the difficulty of distinguishing chronic cystic and interstitial cervicitis with erosion from moderately developed or early infiltrated epidermoid carcinoma with ulcerations.

LOCAL SYMPTOMS

1. Hemorrhage.
2. Leucorrhea.
3. Irregular bleeding at or near the menopause should always be regarded with grave suspicion.
4. Bleeding or discharge at the above time is always significant of danger. The belief that irregularity is a normal complement of the menopause has been responsible for many deaths. We

must remember that altered function means altered structure. No sign is so significant of danger as that of irregular bleeding occurring at or near the menopause. Bleeding is the first local manifestation and is shown as an increased or prolonged menstrual flow.

Bleeding arising months or years after the menopause is most suggestive of danger, particularly when it occurs after examination or local manipulation. The bleeding is due to erosions of the capillary blood vessels by the action of tumor cells.

The discharge of uterine cancer is not mucoid or leucorrheal in character. This symptom is present in the incipient stage. At first, it is thin and watery. Later, it becomes tinged with blood, resembling beef juice in consistency and color.

By careful visual examination of the lesion at the beginning, the growth appears as a bluish nodule, or a red, warty, granular mass projecting from the cervical lip, most frequently from the posterior lip.

A biopsy of the cervical tissue for histological examination, by a competent pathologist, is extremely important at this stage.

MICROSCOPIC CHARACTERISTICS

The histological characteristics of carcinoma are as follows:

1. Atypia or anaplasia of the epithelial cells.
2. The invasion or breaking through of the basement membrane.
3. The destructive tendencies in displacing or assimilating normal tissue cells.
4. The formation of metastases either by continuity into adjacent tissues and organs or by emboli in the regional lymph nodes.

An early diagnosis of cancer is justifiable without the evidence of metastases. Early carcinoma is present when anaplasia alone is seen. Early carcinoma is present when there is an abnormal behavior in staining qualities, an irregularity in shape and size of cells and of the nuclei, as well as loss of polarity. Beneath the basal membrane, and in contact with this new epithelium is an acute inflammatory exudate. The anaplastic changes present the earliest evidence of cancer in human subjects. Microscopic examinations of tissue removed by biopsy or amputation of the cervix require serial sections, if one expects to find evidence of cellular atypia.

I believe in immediate examination and repair of the majority of cervical lacerations occurring during labor. All should view the cervix in the same light as Charlton, who aptly writes: "Let every chronically infected cervix be approached, not as an hypertrophy, not as a laceration, but as a prologue of an epithelial drama whose curtain may be malignant death."

In conclusion, I would once more emphasize the importance of an early diagnosis of cervical carcinoma by means of a careful evaluation of the symptoms and physical signs previously described and, furthermore, I wish to reiterate the importance of the performance of biopsy in all suspicious cases. Only thus will we be in a position to prevent the calamity of having operable cases advance into the inoperable stage.

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RESUSCITATION OF THE NEWBORN.*

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A newborn infant is a most precious thing. That sounds like a platitude and, I admit, it is. Because of the exigencies and trials of the so-called modern living of today, the newly-born babe is even more precious than it has ever been before; not for the reason that maternal and paternal love has increased over former times, but because certain modes of thought and various factors, some of them unexplainable, have increased the importance of the child.

It is an undeniable fact that the birth rate of this and other western nations is declining to such an extent it is approaching the death rate. Whether this is for good or for bad we will leave to the geneticists and economists. Certain leaders of nations view it with such alarm, however, that prizes and trophies are given those families producing the most children. Bachelorhood is taxed in one country. As

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to the cause of this decline I do not know. We can think of the trend to apartment dwellings which prohibits the raising of large families, the spread of contraceptive knowledge, the realization of women that their chief function in life is not to be an incubator, the decline of family life, the increase in abortions, —all of these may have their influence. To the state anyway, the babe is more precious than formerly; and really it is at a premium.

Despite the recent publicity given to child marriages it is my opinion that women are producing their offspring later in life than before. The two or three or even one child family is the commonplace thing rather than the exception; this makes successful outcome of childbirth important. For reasons of state and for reasons of family and for reasons of humanity and conscientious medical practice we should strive by all means possible to bring to every parturient woman a healthy child as a reward for her ordeal of labor. True, some mothers do not care whether we do or not, but still we must do it.

Tremendous strides have been made in the last decades in reducing the fetal mortality occurring in the first month of life. The same thing cannot be said about the mortality in the first few hours; it is still the same as it was many years ago. A study of the statistics of the Birth Registration Area of the United States shows that within the first twenty-four hours after birth 110,000 of the newborn babies are lost annually. This means that about one baby out of 20 dies from obstetrical causes[1]. In studying 800 autopsies on newborn infants, exclusive of stillbirths, Cruikshank[2] found that 65.5 per cent were caused by asphyxia, prematurity, atelectasis or birth injuries. All published reports of autopsies studied by the author reveal a high percentage of deaths caused by asphyxia and atelectasis or pneumonia. This is not as it should be. With improved means of hospital care, more newborn conscious pediatricians, and better obstetricians, the percentage of babies surviving should be greater. It is with this thought in view that I wish to discuss with you this evening some facts and a few fancies concerning resuscitation of the newborn.

The subject of resuscitation is not a new one. How far back the literature runs we have no means of knowing but we read in the writings of a layman living in the eighth century B. C., "And he went up, and lay upon the child, and put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands; and he stretched himself upon the child; and the flesh of the child waxed warm. Then he returned and walked in the house to and fro; and went up and stretched himself upon him; and the child sneezed seven times, and the child opened his eyes."[3] Moncrieff[4] points out the similarity between this and present-day treatment, particularly the application of warmth and the insufflation of carbon dioxide from the expired air. I think the calmness and the lack of hurry shown by the prophet also should be noticed and emulated.

What is it that makes the newborn babe take its first breath? That is a question that has been handed down through the ages. Barcroft and Barron[5] by means of ingenious studies on sheep have shown that there are movements by the fetus in even early fetal life. These are transferred to respiratory movements by stimulation. A suggestive phenomena that they recorded was that by clamping the umbilical cord a distinct inspiratory effort was made in young fetuses. This is very significant, I think, as it would make us think of an alteration in the gaseous exchange as being responsible for the first inspiration. Mass movement occurs first; we have all noticed the stretching of the infant before it makes its first inspiration. Henderson[6] says the cause is an increased tonus in the musculature on the baby which increases metabolism and heat production and renders respiration effective. This tonus comes from the coming into action of the motor centres of the spinal cord. He does not tell us, though, what stirs these centres into action. The shock of air on the babe's body may play a part but Ahlfeld delivered infants into warm saline solution and still they breathed. DeLee[7] mentions the rushing of air into the trachea but we have all noticed the respiratory efforts in infants during breech deliveries before the face has had a chance to be exposed to air. The question has not been settled yet, but I firmly believe that in the last analysis we shall find it to be caused by changes in placental circulation.

A disturbance in the normal respiratory action of the newborn can be of either central or peripheral origin. Let us subdivide these further. Under central origin: (a) immaturity, (b) damage to the respiratory center, (c) depression. Under peripheral origin: (a) immaturity or underdevelopment of muscular tissue, (b) obstruction, (c) delayed ex-

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pansion, (d) circulatory failure. Perhaps, if we discuss the etiology and treatment together (they are interlocked so closely) we may be able to get a clearer picture of respiratory distress. Immaturity we will consider hurriedly.

The premature child has not developed its vital centers and musculature to the stage of being able to regulate respiration efficiently. The muscular tonus cannot furnish heat necessary to carry on; the respiratory centre is still immature. By artificial heat and frequent inhalations of carbon dioxide and oxygen we can perhaps keep them to their required tonicity. The care of the premature is the same as the care of the full-term child except that *infinite* more watchfulness and gentleness are necessary.

CENTRAL CAUSES.

Danger to the respiratory centre, it is true, cannot always be prevented and the accoucheur is blamed for many cases of neonatal death that are in no sense of the word his fault. Still, by strict observation prenatally we can sometimes anticipate the type of delivery to be expected. A greater respect for obstetrics as a science and a dispelling of the all too common practice of "laissez faire" would, I am sure, aid in reducing the neonatal death rate. To discuss this fully would take us too far afield.[8] There is a type of respiratory distress due to cerebral edema that we can aid.

M. P., para 1, 32 weeks pregnant, was admitted to the hospital after having five eclamptic convulsions. While there she had two more. Dehydration treatment was instituted at once. Fifteen hours later labor was started by rupture of the membranes. Five hours later the babe was delivered by Kristellar expression after a wide episiotomy. Resuscitation was difficult. For twelve hours the child had alternate spells of cyanosis with difficult breathing and normal respiration for which carbon dioxide and oxygen were given. Then a hypertonic saline enema was administered. Except for a slight feeding problem the child has been all right since.

Plenck[9], in 1801, advocated the giving of a saline enema but it is doubtful that he appreciated the rational of the procedure. Moncrieff[10] reintroduced the measure in 1934 as a means of reducing cerebral edema and thus lessening pressure. In some cases of unexplainable asphyxia, that is, where the birth has been entirely normal, the giving of a saline enema will often bring about a happy ending.

Ever since time began women have sought relief from the anquish of their labors. I cannot agree with Nielsen[11] that they are much better off for having suffered. All of us have not the hypnotic powers of DeLee[12] or the persuasive ability of Neal. Women demand relief and it is up to us as physicians to give it to them. But, if we do, we must be prepared for an increased number of cases of asphyxia neonatorum. Morphine is notorious for its effects on fetal respiration if used injuliciously. It has been proven also that the barbiturates are not innocuous. Irving, Berman, and Nelson[13] warn that their method of analgesia is not without danger. Imagine my dismay, then, when Lewis[14] after a study of 500 cases came to the conclusion that it was not the narcotics given but the trauma of labor which was responsible for the fetal distress. Trauma plays a big part, it is true, but if Lewis means that analgesic drugs can be given with impunity I hope that his teachings are modified. He does say that when a difficult labor is anticipated drugs should be withheld. Henderson, in an impassioned plea in a recent article in the *J. A. M. A.*, gives reasons why we should be careful with the administration of analgesics.

One thing to remember in the resuscitation of narcotized babies is that extreme gentleness must be taken. While attempting to make a narcotized child breathe, the pupils, which had been widely dilated, suddenly contracted to pin point size and it was only through heroic measures that the child was saved. Carbon dioxide and oxygen should be given repeatedly if there is a relapse to cyanosis.

Chemical factors play a large part in the initiation and maintenance of fetal respiration. Just what these factors are is still a matter of controversy. Barcroft[15] has shown that in fetal life there is a decreasing oxygen concentration; carbon dioxide is supposed to be increasing. Yagi[16] has shown that in the depressed baby at birth the carbon dioxide is also decreased as well as the oxygen. Because of this we should not make violent efforts at resuscitation if there has been fetal distress before delivery—prolapsed cord, pressure on the cord, or tumultous pains for example. It is in these cases that Hecht[17] recommends the giving of oxygen inhalations to the mother or making her take hyperventilatory respirations before the child is born. He says this might

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depress the respiratory centre of the fetus and prevent the aspiration of amniotic fluid. Stimulation of the respiratory centre or hurried attempts to make the baby breathe will wash out of the circulation the little carbon dioxide that is there and aggravate the situation. This is the chief objection I have to the Murphy Drinker respirator which by suction simulates respiration. Five per cent CO_2 and 95 per cent O_2 should be given slowly until the demands of the respiratory centre and tissues have been satisfied. Drugs should be withheld as their quick and violent efforts may defeat their purpose. DeLee asks, "Would not the acute reversal of the chemism going on in the tissue favor shock?"

It would not be amiss here to discuss the use of drugs in the resuscitation of the newly born. The author has used coramine for some time when drug therapy seemed indicated. For the past two years I have been wondering if in many cases it was the prick of the needle that played the role of resuscitator rather than the solution. Caffeine has such a fleeting action I am doubtful if it is of any service. Lobeline has a depressing action on the heart. Coramine is a powerful stimulant and must be used with care. Metrazol has had favorable reports, but my experience with it has been too short to express an opinion. The injecting of any stimulant into the umbilical artery would seem to be too much of a shock to the respiratory centre, yet there have been reports of its efficacy. Intra-cardiac injection is usually used as a last resort, and is of little if any benefit. A case of pneumothorax has been reported from piercing the pleura while doing this[18].

Lewis[14] remarks that gas oxygen anesthesia used for the termination of labor has little or no effect on the newborn. This is contrary to the findings of Eastman[19]. He found that strong concentrations of nitrous oxide and oxygen given over periods that exceed five minutes produced marked degrees of fetal anoxemia; occasionally fatal. The author has noticed the same thing. It is a good policy to carry lower concentrations of the gas and to flush the patient with oxygen frequently. The treatment of respiratory distress from this cause is the same as above.

PERIPHERAL CAUSES

Obstruction. With tracheal obstruction we shall also consider atelectasis, for the latter frequently follows in the wake of aspirated material. I agree with McGrath and Kuder[20] that it is with this group that we should be most concerned as it is here that we have the greatest opportunity to lessen the incidence of neonatal death.

The lungs of the newborn child are atelectatic at birth. While in the uterus the mouth and trachea of the fetus are filled with amniotic fluid and debris. At the first breath this is sucked into the lung spaces. Farber and Sweet[21] found 80 per cent of 124 unselected babies dying within the first five weeks of life to have aspirated material in the bronchioles and alveoli. The normal child with good muscle tone is usually able to prevent the aspiration of this debris to the lower respiratory system.

The best treatment is prophylaxis. We all wipe the baby's mouth and nose as soon as the head is born. Perhaps by that time, though, respiration has commenced and in the case of a weak child with poor muscle tone aspiration has already occurred. The author for the past four years has made it a practice to prevent any respiration of the newborn babe by literally choking it with two fingers as soon as the face has passed over the perineum. This gives the operator a chance to clear the pharynx before the first inspiration is taken.

The prime requisite in asphyxia due to obstruction is to remove the obstruction. This is best carried out by using the direct intubation method of Flagg[22]. Often times, merely removing mucus from the fauces will suffice to restore normal respiration; a soft rubber catheter or careful wiping with gauze can do this. We may have to intubate the trachea. This can easily be done by the direct vision method, using the Flagg apparatus. If this apparatus which is not as expensive as is commonly reported, is not available, one can locate with the finger the tiny slit that is the larynx and guide the tip of the catheter into it. Suction is then made to clear the larynx and trachea. Many times the manipulation will start normal respiration as soon as the catheter is removed. An excellent way to stimulate after this process is to insert a catheter into the nostrils.

In giving of artificial respiration *be sure* the larynx is clear or matters will be made worse. The author emphasized this in 1935[23]. We should try to imitate normal newborn breathing, that is, about 40 inspirations and expirations per minute with no intervals. By use of a tracheal catheter this can be given directly into lung. If mouth to mouth breath-

ing is employed the same rate is used. *Be careful.* The amount of pressure to be used is still a question. The minimal amount is the best. McGrath and Kuder give as the maximum pressure 25 mm. of mercury. This seems to us to be too high. DeLee recommends 4-8 mm.

Patient A, para 33, was admitted to the hospital, cervix fully dilated, membranes intact. Immediately she delivered a breech spontaneously. Much mucus and debris were in the child's throat. Artificial respiration was given by using the apparatus of Flagg. The baby died about four hours afterward. Autopsy showed emphysematous lungs, as fully expanded as a newborn's could be. At the clinico-pathological conference I made the remark, "We tried so hard to save it that we killed it." The pressure was too great. Poeck[24] describes a similar case. Emmert[25] cites a case of ruptured lungs and fatal pneumothorax from mouth to mouth breathing. The amount of force to be used has been stated by Tow[26] to be—"with the lips pursed to whistle, the forced to be used would be felt on the wet finger about three and a half to four inches from the mouth."

If atelectasis is present frequent inhalations of CO_2 should be given. Especially is this true in prematures. It has been the author's practice to give these inhalations routinely the first two or three days. All of the alveoli are not opened up at the first cry. Several days are required even in the more robust infants. It is my belief the inhalations of CO_2 and O_2 aid in overcoming the natural adhesive qualities of the lung tissue.

Leff[27] blames almost all cases of asphyxia on overloading of the fetal circulation. His explanation of fetal death after cesarean section carries a sound warning against the use of pituitrin before extraction of the fetus. The pressure causes an overloading of the fetal circulation. The overloading of the fetal circulation may cause fetal heart dilatation which causes pulmonary congestion and edema.

Asphyxia neonatorum means anoxemia. Anoxemia causes cerebral damage by petechial hemorrhages. To off-set this it may be wise to give blood intramuscularly to all cases of delayed respiration. I give it routinely to all the babies I deliver.

SUMMARY.

To summarize, let us consider a hypothetical case of asphyxia:

1. Clear the fauces and nostrils. Often this will be all that is needed.
2. Give artificial respiration. This is done best by means of the Flagg apparatus. This is not available to all of us, so a tracheal catheter is the next best. Of course, the use of a mask after cleaning out the larynx may be used. The Drinker-Murphy apparatus may not be tuned to the child's respiratory rate and may thus interfere with the child's respiration. Also, it can easily wash out of the lungs the CO_2 available on the lines of the Bohr phenomena and aggravate affairs. For this reason I do not recommend it. Mouth to mouth resuscitation is unnecessary.
3. If the child takes two or three breaths and then respirations lapse, it would be well to leave it alone except for the application of heat. It is very probable that it is narcotized. Frequent and careful inhalations of CO_2 and O_2 can be given.
4. After this, if no favorable response is obtained, coramine or metrazol can be given, not over ½ cc.
5. A saline enema, as in the case cited, may be of great benefit.
6. The injection of mother's blood prophylactically.
7. If no response is obtained, an X-ray is advisable to relieve the accoucheur of blame (congenital defects, cardiac pathology, etc.) if cerebral hemorrhage is not likely. However, it is most likely.

CONCLUSIONS

The newborn babe is at a higher premium than before.

Asphyxia neonatorum, prematurity, and cerebral hemorrhage are the chief causes of death. The treatment of the latter two is better obstetrics. The treatment of the former is: first, more judicious handling of labor and care in the giving of analgesia and anesthesia; second, recognition of the cause of the asphyxia and appropriate treatment.

Gentleness is to be emphasized.

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CIRCULATORY AND BLOOD CHANGES DUE TO PHYSICAL EXERCISE.

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Although mankind throughout all history has engaged in various degrees of physical activity, the scientific study of the physiology of muscular exercise is a relatively new field of investigation. Inasmuch as the physician is frequently called upon to advise patients concerning their work or exercise, it would seem important for the practitioner to know rather thoroughly the various known effects of exercise on the human body. Among the most important of these, are the changes in the circulation and on the composition of the blood which result from muscular exertion. Some of these changes shall constitute the subject of this article.

It is convenient to divide the subject into two parts, namely: (1) Immediate, and (2) Chronic Changes. The *immediate* changes are those which occur *during* or shortly after exercise; while *chronic* changes are those more or less permanent effects of exercise which must usually be observed under basal conditions of the animal at rest.

With the understanding that circulatory and blood changes during exercise are generally proportional in extent to the intensity of exertion, we will proceed with a discussion of some immediate bodily changes ascribable to fairly strenuous exercise.

IMMEDIATE EFFECTS

The *heart rate* is increased by physical exercise, and during severe exertion may become 2.5 times the resting value. The physiologic mechanisms concerned are, in order of importance: (1) Reflex inhibition of vagus tone, (2) stimulation of the cardio-accelerator center in the medulla, (3) increased liberation of epinephrine, and (4) elevated body temperature. (Gasser and Meek[1] and Samaan[2].) The well-known Bainbridge reflex probably operates

here wherein an increased venous blood pressure in the region of the right auricle causes a reflex acceleration of the heart rate.

Stroke volume of the heart, or output per single systole, may increase by 2.5-fold. (Hill[3]). This results from a more forceful systole consequent upon greater venous inflow of blood to the heart, and greater stretching of cardiac muscle,—involving Starlings' law of the heart.

The *minute volume* of the heart, or cardiac output per minute, is the product of the heart rate and stroke volume. Its value, at rest, ranges from 3 to 5 liters; and during severe exertion of the individual may reach 30 or 40 liters. (Hill[3]). An increase of 7 to 10 fold is, therefore, possible.

Contraction of the spleen occurs very promptly after the onset of exercise, and Barcroft[4] has calculated that this factor may contribute an additional 10 per cent of erythrocytes to the circulation. E. C. Schneider[5] observed an increase of 9 per cent in the erythrocyte number of a sprinter immediately after a dash of 100 yards in 10.7 seconds. Other blood reservoirs, e. g. in the portal and pulmonary circulations, may have contributed to this increase. In any event, the main point is that the *oxygen carrying capacity* of the circulating blood is increased. Incidentally, sustained contraction of the "exteriorized" spleen of conscious dogs has been observed by Barcroft[4] following exercise, excitement, ether and chloroform inhalation, epinephrine injection, and by the author, following intravenous injections of certain drugs[6].

The coefficient of oxygen utilization[7], as well as the oxygen capacity of the blood, is increased by exercise. This means that each unit of blood traveling through active muscles surrenders more oxygen to the tissues.

Increased *epinephrine liberation* by the adrenal medulla is initiated reflexly, by exercise, and by excitement.

A rise of *blood sugar* follows the stimulation of liver glycogenolysis by the increased epinephrine liberated during work.

Lactic acid increases in the blood when the "critical work level" is reached, which varies with each individual. During exercise, the subject goes into *oxygen debt*, that is to say, his contracting muscles form lactic acid at a faster rate than oxygen can be supplied to them for the removal of the acid. The size of the oxygen debt is proportional to the rate and duration of work; and practically all athletic activity is marked by acid accumulation in muscles to such an extent that the critical level is surpassed.

Oxygen consumption rates of 4 to 5 liters per minute have been observed following brief strenuous work. Thus it is seen that oxygen consumption during work may increase to at least 16 times the resting consumption. Even so, the maximum oxygen supply

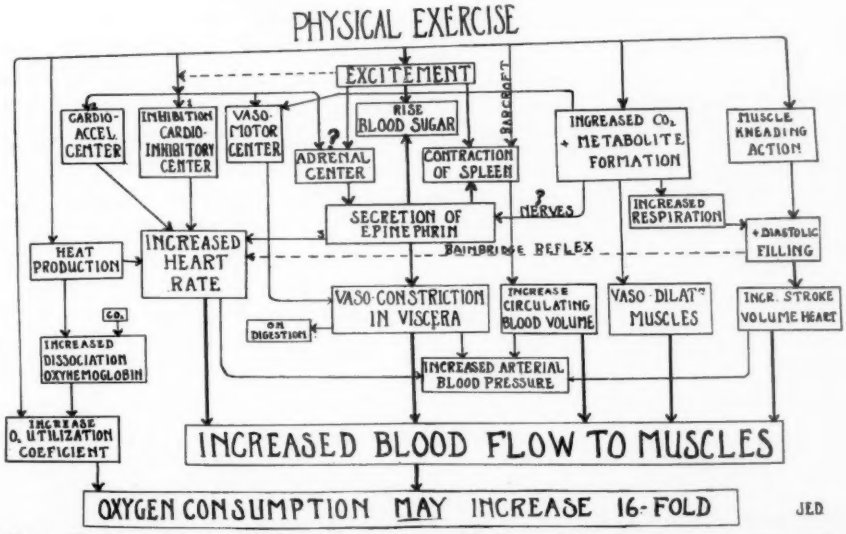

Fig. 1.—The interaction of certain bodily changes concerned in the promotion of an increased oxygen supply to active muscles during exercise.

will not meet the demand when the body is producing energy for example at a rate of 7 horsepower, as calculated by Hill[8] for a 100 yd. sprinter. Hence, the body is able to go into debt for the maximum sum of 15 liters of oxygen, which must be paid for by excess consumption after the cessation of exertion.

Figure 1 shows the interaction of certain cardiovascular and other bodily adjustments which may be considered as having for their main purpose the promotion of an increased oxygen supply to active muscles. It will be noted that the main factors promoting increased blood flow to muscles in exercise are: (1) increased heart rate, (2) increased stroke volume, (3) increase of blood volume, (4) vasoconstriction in viscera which diverts blood to the muscles, and (5) vasodilatation in active muscles.

This last factor, vasodilatation, occurs with the onset of exercise and is probably sustained by the local action of metabolites (e. g. CO_2, lactic acid). Some of the changes shown in our diagram can be elicited by mental excitement, without exercise.

Systolic blood pressure rises as a result of increased cardiac output, increased blood volume, and vasoconstriction in the splanchnic areas. An opposing factor, which tends to keep the arterial pressure lower than it otherwise would be, is the vasodilatation in active muscles during exercise.

Venous blood pressure is raised during physical activity by the mechanical kneading action of contracting muscles which forces blood toward the heart, and also by the increased arterial pressure and cardiac output.

Erythrocytes, leukocytes and *hemoglobin* per unit volume of blood are increased by 10-15 minutes of strenuous running exercise. (Schneider[9]). In the dog, such exercise is followed also by a slight increase of total *plasma volume* of the body, (Broun), and if the exercise be continued over a 4-hour period; a steady increase of the plasma volume occurs.

Osmotic resistance of red blood cells to laking by hypnotic salt solutions is increased by strenuous exercise, (Hastings[11], Liebermann and Acél[12]). The usual interpretation is that the least resistant cells are broken up by mechanical fragmentation in the circulation during exercise. Rous and Robertson[13] have shown that fragmentation is an important process of blood cell destruction.

The pH of the blood is decreased in man by severe exercise. Dogs exercised by treadmill running, however, may show alkalemia, which follows overheating of the body with consequent panting (as a cooling mechanism) and blowing off of CO_2 at the lungs. (Rice and Steinhaus[14]). Dogs exercised by swimming in cool water, however, show a decreased pH of the blood just as does man.

CHRONIC EFFECTS

Chronic changes are developed by regular exercise taken over a period of weeks or months, and are best demonstrated in *trained* athletes and animals.

A *slow resting heart rate* is a characteristic of trained athletes and is attributed by Kauf[15] to an increased vagotonia. The *stroke volume* of the heart is greater in the trained than in the untrained individual. De Mar, a famous marathon runner, had a resting stroke volume of 120 cc. which is about double the normal value for sedentary individuals.

Lindhard[16] reports that a period of physical training increases the resting cardiac output per minute by about 20 per cent. Concerning the effect of training on the minute volume of blood *during work*, there is no unanimity of opinion.

Resting systolic blood pressure is reduced by hard physical training. The reduction found by Herxheimer was from 116 to 106 mm. of mercury.

Blood volume, total circulating hemoglobin, and erythrocyte count are increased by 10 to 25 per cent after 4 or 5 weeks of daily treadmill running or swimming in dogs. (Davis and Brewer[17]). It is a significant and instructive fact that *previously sedentary* dogs suffer a marked *anemia* during the *first week* of physical training. Blood volume, hemoglobin, and erythrocyte number are reduced by 5 to 30 per cent at this stage of training. (Broun[18], Davis and Brewer[17]). Our swimming dogs were obliged to keep afloat in water at a temperature of 30°C for 2 hours daily, while the "runners" covered a distance of 6 miles daily on a treadmill inclined at a 25 per cent grade. These exercise programs were not exhaustive, and the animals appeared to take pleasure in the work.

The *initial excessive blood destruction* in previously inactive animals is thought to be accomplished mainly by mechanical fragmentation of the least resistant corpuscles in the circulation. The bone marrow apparently is not immediately able to make good the severe loss of corpuscles, but finally responds to some stimulus, and increases its erythrocyte

production rate. The author contends, for various reasons, that the stimulus to the bone marrow is the *oxygen debt of exercise.*

Although the *erythrocyte number,* as previously stated, is increased by training in dogs, results upon humans are contradictory thus far, perhaps because it is difficult to persuade perfectly untrained people suddenly to undergo a course of strenuous physical training.

Hemoglobin per unit volume of blood at *no time* during training exceeds the pre-training level. In fact the hemoglobin content per corpuscle, or hemoglobin index, is actually decreased by regular exercise (Thorner[19], Davis[17]), but the *total circulating hemoglobin* of the body exceeds the pre-exercise normal after 4 to 8 weeks of exercise[17].

Total leukocyte number is probably not changed by daily exercise, but a relative lymphocytosis is reported to occur. (Herxheimer[20], etc.)

Thrombocytes per unit volume of blood are increased by physical training according to Behrens[21].

Alkali reserve is increased in trained men (Full and Herxheimer[22]) and dogs (Davis and Brewer[17]). Exercise, it seems, "chemically trains" the blood by increasing its content of available base for the neutralization of acids. The very presence of an excess of acid in the blood during exercise possibly induces the formation of a greater alkali reserve. The magnitude of the alkali reserve of the body is probably an important factor in physical endurance.

Bock *et al.*[23] state: "We believe that the capacity for exercise is bound up with changes in the oxidative processes within the cell", and explain that they cannot account for the efficiency of an athlete in terms of increased efficiency of breathing or circulation alone. Yet we can readily see that improved circulatory efficiency and oxygen capacity of the blood are very important factors in physical efficiency.

MISCELLANEOUS: Longevity of college athletes is the subject of an article by Dublin[24] which shows that a group of 5,000 college athletes had a lower death rate than selected insured men.

Literature on the influence of muscular fatigue upon resistance to infections and disease is reviewed by Baetjer[25]. The influence of exercise upon certain immunological factors was studied recently by Jung[26] with rather negative results.

For reference work on exercise physiology, the reader is referred to books by Bainbridge[7], Schneider[27], Gould and Dye[28] and to an excellent review of the chronic effects of exercise, by A. H. Steinhaus[29].

SUMMARY: Certain effects of exercise and physical training upon the blood and circulation are presented. The author is of the opinion that moderate and properly supervised strenuous exercise is, on the whole, beneficial to healthy animals. Certain deleterious effects upon the blood following sudden strenuous exercise in sedentary animals are pointed out and warned against, and conclusions are left for the physician to draw.

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XUM

MEDICAL EDUCATION AS A FACTOR IN THE SOLUTION OF PRESENT PROBLEMS.*

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Richmond, Virginia.

This is the first of a series of six articles based on "American Medicine: Expert Testimony Out of Court", which is the current report of the American Foundation on its inquiry into the organization of medical care. This first article might well utilize the space reserved for the other five (to be published in successive issues of this Journal), for the discussion of medical education—by medical men—in the Foundation's report is so thoroughgoing and so comprehensive that it will be possible, in the space available this month, to touch upon only the high points of this discussion of the present and the future status of medical education in this country.

It has been a matter of surprise to some that medical education bulks so large in the report of an inquiry designed to elicit the answer of the medical profession to the question whether a radical change in the present organization of medical care is or is not indicated. This question falls in the category of what is commonly described as "medical economics", and more usually provokes statements on the high cost of medical care and the possibility of lowering it; on the degree to which medical care is or is not available; on the possibilities of better distribution, etc., etc. That is the tone and temper and substance that would have characterized economists' and social workers' answer to the question. Medical men answered it very differently. To them, the urgent present problem lies less in lowering costs or in getting better distribution than in getting better medicine.

The direct testimony of the report itself is in point here:

"The letter of inquiry, which did not mention medical education, brought back from a significant number of outstanding men throughout the country replies which said, in effect, the following:

'We think there is a problem. We do not consider that the resources of medical science are available in so great degree as they should be to nearly the number of the population that they should reach. But we do not think the problem can be defined in terms of "cost" and "availability." We do not think that you can "distribute" what you haven't got. Medical care is not a commodity, and cannot be subject to the laws of commodity distribution. Adequate medical care is a changing, not a static, thing. It cannot be defined in quantitative terms. It cannot be defined in permanent terms. Medical science is developing rapidly; the amount and the intelligent application of new knowledge is, it is true, gradually increasing; but the field of the unknown is still vast, and the number of those fully competent to apply what is known is still very small. Even if it were possible to "distribute" medical care, there is by no means a sufficient number of adequately trained men to supply it on a broad social base.

'Our general feeling is that so long as so much remains to be done in the way of training men that can give "adequate" medical care, and in training enough of them, and in making it impossible for the incompetent to offer what they cannot give, we cannot greatly interest ourselves in discussions of how medical care is to be distributed or what the cost of it to the ultimate consumer should be. These latter questions have great social and economic importance. They must be answered. But they must be answered in relation to the problem of developing medical care of high order and the problem of training and graduating and sending out to practice men that can supply it. . . .'"

"Until the schools have met the situation, organizing schemes or regimentation by the state will only make things worse. No system, old or new, will work until there is greater competence. Of what profit will it be to establish community hospitals in *every* community if there are not thoroughly trained men to man them? Establish them, of course, but establish them only in direct relation to the means of staffing them competently and to the means of maintaining the competence of the men with which they are staffed. Don't set up the shell unless the living organism is within it."

The above cannot be disposed of as merely the natural and expectable point of view of the college professor. While professors, part time and full time, and deans of medical schools did contribute notably to this section of medical education in the American Foundation's report, many men in other types of medicine—general practitioners, specialists in all fields, men in administrative medicine, members of certifying and of state examining boards—also testified to the conviction that the key to the solution of

*First of six articles reviewing sections of "American Medicine: Expert Testimony Out of Court"; published by the American Foundation, 565 Fifth Avenue, New York City; 1,500 pages, two volumes ($3.50 for the two volumes).

present "medical economic" problems really lies in medical education. It was not a college dean but a general practitioner in Indiana that wrote to the Foundation the words that form, so to speak, the text of this section on medical education in the report: "The best is not yet good enough."

What can the medical schools do to make it better? To get clearly the very full answer to this question that is conveyed by "American Medicine" the reader will have to go to the report itself, for the answer is manifold, much too extensive and much too concrete to be satisfactorily summarized.

There is, of course, due recognition of the great advances made in medical education during the past twenty-five years. It is recognized that, as a result of a conscious, directed effort during the past generation, sub-standard schools have all but disappeared, medical teaching has been related fairly satisfactorily to the rapid development of medical science, standards for admission to medical schools have been surveyed and elevated, the quality of medical teaching has come under review, the absolute need of adequate hospital facilities for clinical observation and teaching has been increasingly taken into account.

Nevertheless the sum total of the doctors' testimony in this report (and the report, it must constantly be remembered, was written by the doctors themselves, synthetically) is certainly that many additional improvements in medical education in this country are now due, and over-due.

In the view of many, the educational situation should be attacked at the source: a closer principle of selection should be applied to the candidates for medical education. Admittedly this is not easy. It is hard indeed to devise "aptitude tests" that will really show who is fitted for a successful career in medical science and who is not. Many of the men in medical colleges that have struggled hardest with this task of devising ways of choosing the best students are most humble about the results of their labors. They suggest that if boards of admission were to follow up their own work, and compare, after three years or so, the records of those they refused with the records of those they accepted as outstandingly hopeful, they might in such a survey of evidence of their own mistakes and miscalculations, "learn something to their advantage." It is certainly true, if the testimony of the medical leaders writing in this report is to be trusted, that a great many of the wrong men get into medicine. But it is hard to devise a test that will keep them out—and not keep out good "prospects" too. It is pretty hard to decide with finality that a boy of twenty-two with uneven endowment and obvious crudities may not be a disciplined and productive person at thirty-five.

The effort to find good and effective tests for selecting the best candidates for medical education is not discouraged, but the difficulty and the complexity of the task are stressed. It is more than suggested that perhaps the way to get better men into medicine, and to prevent the unfit from choosing a medical "career", is less a matter of testing candidates than of clarifying everybody's conception of what it really means to be a good medical scientist and a good doctor.

The report brings into high light some of the things a man ought to know with finality about medicine before he gets into it: He ought to know that competence in exacting scientific study calls for marked mental competence. He ought to know that it calls for instinctive as well as trained capacity for observation and perception—the clinician's faculty. He ought to know that medicine calls for persistence and industry and ardor—and that without these qualities he cannot be happy in the profession and will be a positive menace to the patients.

The president of the ranking professional organization in one of the specialties says, in the report, on this point:

> "If we allow endocrinopathies, indolence, self-interest and laziness to enter medicine, they will turn up time and again in one form or another and in one or another relation between the doctor and his patient, just as they would in any other field, no matter what system of remuneration for service is generally adopted."

And the editor of the report comments:

> "The trouble is, however, that these qualities, turning up 'just as they would in any other field,' enter sometimes at points in which the issue is life or death. Some of our correspondents feel that so much has been said to demonstrate that a good doctor is not merely a person with heavy brain capacity, that the weight needs to be shifted to the other side. Let him be capable by all means of practicing the 'art' of medicine—but the 'artist' should pass the admission board only if he is also, and first of all, the scientist."

The medical candidate, it is pointed out, must realize that there are three ways in which medicine —under *any* system—will always differ from most

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other professions or "businesses": (1) It will (even if doctors are paid from public funds for service to the indigent, as they most certainly should be) never be anything but a hazard, so far as money making is concerned; (2) medicine will always be, in part, a public service—it can never under *any* system, be a purely private and individual venture; and (3) it will always call, on the part of the doctor, for more than average interest in the difficulties of other people—for altruism, if you will. Medicine is no place for those that do not choose it with these facts firmly and unsentimentally in mind.

Having accepted the student, has the approved medical school of the present the proper course to give him? How sound is the present curriculum? Is it adapted to fit students for the work which they will actually have to do? These and many other questions bearing on the curriculum are weighed and debated in the report.

There are the not unfamiliar comments that the medical schools of today train too much for the specialists, aim too much at turning out a generation of technicians, emphasize too strongly the laboratory approach, exalt the test tube over the patient; that too much attention is given to rare and unusual diseases, and that study of end results in great hospitals does not particularly equip the young man whose actual practice will lie chiefly in taking care of the colds, tonsillitis and measles of the Jones family.

By and large, however, the weight of opinion in this report is that no particular concern need be felt on the score of super scientific teaching in the medical schools of today. If, here and there, there has been over-emphasis on the laboratory approach, if the disease rather than the patient has been the centre of attention, the pendulum, it is maintained, is already swinging the other way. It would be dangerous, in any case, many writers feel to minimize the importance of the scientific aspect of medical training: when all that can be said about the "art" of medicine as contrasted with the science has been said, it still remains true that the X-ray shadow of a heart is a better method of detecting enlargement than percussion with the fingers.

A less conclusively answered question in the report is whether the medical course of today really takes into account sufficiently the life and work that await the graduate and whether medical faculties at present really know just what the *objective* of their training is. Some writers make the point that the same course of training could hardly be expected to be equally profitable to, for instance, a man who intends to spend his life in research, a man who intends to proceed at once to the study of a specialty, a man who intends to do medical work in China, a man who intends to become a public health administrator, a man who intends to return to his native town to engage in general practice. With the differentiated ways of practicing medicine in mind, some writers would differentiate the training. Others feel that the basic training for all types should be essentially the same, that the purpose of the undergraduate course is to develop capacity rather than to convey specific content, and that the same general training therefore is in order for all, without much regard for the differentiation of their later work—for which special and additional preparation is needed, in any case.

To illustrate the differing views on this point cited in "American Medicine": one contributor, a professor of medicine in an approved medical school, thinks medical training should be devised for *four* separate types of graduates: general practitioners, public health officers, specialists, research men.

Balanced against this view must be that of another group of writers quoted in the report who believe that different activities and different outlooks in different branches of medicine must indeed be taken into account, but that what is needed is to *integrate* these rather than *separate* them. Of the latter group is one of the Harvard contributors who writes at length of the fallacy in the notion that "curative" medicine and research of clinical science can be successfully separated. To quote him briefly (and here again a brief quotation is unsatisfactory; the reader needs the full quotation in the report for adequate appreciation of the development of the point):

"The spirit of progressive medicine (clinical science) should and can be instilled into daily practice. Each patient presents a problem for study which can be adequately solved only on the basis of principles similar to those applied in progressive (research) medicine. As Herrick has pointed out recently, it is the combined functions of investigation and care with human sympathy which constitute the essential requisites of a good physician.

"Training of students and graduates in the principles of research, as applied to the care of the patient, will have

a lasting, elevating effect on their professional approach and activities. . . .

"As investigation is an essential part of the university clinic, it is mainly the clinical activities *superadded* to research which differentiate the university clinic from the research institute. . . .

"An ideal clinic will be a place of learning in which men of ability with different interests and different tastes will work side by side in a free and friendly spirit. Here clinical science and curative medicine will not be segregated, but ward research and laboratory investigation will be inspired by bedside observations.

"The members of the clinic will remain in close contact with the specialties of medicine and particularly with psychiatry, neurology and dermatology, as well as with the 'preclinical' sciences. The cross-fertilization of ideas between those primarily interested in experimental research, in disease, in bedside observation or in the care of the patient will yield rich reward for the mutual benefit of investigator, teacher, physician and student. . . .

"All I have tried to say is that for the best cultivation of clinical medicine of today, the combined activities of men with various qualifications are essential . . . the development of scholars at work in the university clinic will help to improve the care of the sick."

Limitation of our space forbids even a brief summary of the specific suggestions made by various groups of contributors to the report for modifying either the content or the emphasis of the undergraduate medical curriculum. There is a discussion of the desirability of considering major surgery a specialty, not appropriately to be included in the undergraduate course. There is a discussion of the claims of various of the specialties to additional space and importance in the undergraduate course; in this connection pediatrics and tuberculosis come in for particular reference. There are vigorous pleas for better handling of preparation for public health work in the medical schools and for more, and more creative attention to the teaching of preventive medicine, which, as now taught, is a sufficiently dull subject, associated with perfunctory trips to milk plants and sewer outlets.

There is an animated difference of opinion, among the contributors cited in the report, as to what form of revision the present teaching of obstetrics should take—for there is rather general agreement that, by and large, it *is* poorly taught, and that many graduates are utterly unable to meet the obstetrical problems that come to them in routine. On this point there are two schools of thought: The first would train every medical student more competently in obstetrics, on the ground that it is the heart of general practice. The second group thinks the idea of making a competent obstetrician out of every practitioner is "obvious nonsense", that obstetrics is in effect a specialty needing, except for simple cases (and how can assurance be given that simple cases will not turn out to be complex?), special training and special experience, and that the present trend toward institutional care in maternity makes it logical thus to place obstetrics among the specialties, rather than continue to regard it as something every medical graduate may consider himself competent to essay.

There is vigor and vehemence also in the differing opinions on the question whether psychiatry is entitled to a larger place than it now holds in the medical curriculum. Some writers urge more psychiatry in the medical course on the theory that it will help the young medical man to deal with the total human personality of his patient rather than merely with the disease. Others, while admitting the desirability of achieving this end, think it is not to be achieved by more psychiatry in the medical course. Practically all agree that the somatic effects of psychic influences are just beginning to be really understood, but they do not think that more hours given to psychiatry in the medical course will help to increase the understanding. The psychiatric director of a group of metropolitan hospitals expresses the view of many clearly when he says,

"Psychiatry must be given a large place in the education of medical students and physicians. *It should be looked upon as a form of medical thought and practice rather than an isolated specialty.*" (Italics are ours.)

The section on Medical Education in "American Medicine" concludes with a full and important discussion of postgraduate education, not graduate education for the practice of the specialties (which is dealt with in a later section on Specialization) but graduate education designed to aid the general practitioner to maintain his competence—especially where he has little opportunity for daily clinical observation—and to keep in touch with the rapid development of medical science and with valid discoveries affecting both diagnosis and treatment.

Implicit at many places throughout the section on Medical Education is the conviction that the medical schools are destined to be the guardians of the standards of medical practice and that increased

cooperation between medical men, in their local medical organizations or as individuals, is to be expected from the development of the facilities for postgraduate training, and for other objectives.

The financing of medical schools is likely to become, in the view of many of the medical men who contributed to this report, an increasingly urgent problem, and there is clear recognition of the fact that on the one hand dependence upon tuition fees for existence and on the other hand maintenance of the highest quality in standards, faculty, equipment, teaching, are not compatible conditions.

Correspondence

Some Phases of School Medical Work.

RICHMOND, VA.
May 3, 1937.

TO THE EDITOR:

In my article under above caption, which was published in the May issue of the MONTHLY, on page 101, near the bottom of the right hand column where weights are given for open-air, only the fractions of pounds are given instead of the total amount. I trust you may find the opportunity to correct same. It should read as follows:

"420 children gained 1120½ pounds for September and October.

"Same 420 children gained 482⅜ pounds for November.

"Same 420 children gained 358⅛ pounds for December."

C. L. OUTLAND, M. D.

Miscellaneous

American Board of Surgery Organized.

In answer to the widespread demand for an agency which will attempt to certify competent surgeons, the American Board of Surgery has recently been organized. This Board is a member of the Advisory Board of Medical Specialties which includes all of the boards of certification for the different medical specialties which have been already organized. Since boards were in existence for the certification of practitioners of some of the surgical specialties such as ophthalmology, otolaryngology, obstetrics and gynecology, genito-urinary surgery and orthopedic surgery it is expected that the American Board of Surgery will be responsible for the certification of general surgeons as well as those practicing in the remaining specialized subdivisions of surgery.

Acting upon the invitation of the American Surgical Association, the following surgical societies cooperated in the creation of the American Board of Surgery: the American Surgical Association, the Surgical Section of the American Medical Association, the American College of Surgeons, the Southern Surgical Association, the Western Surgical Association, the Pacific Coast Surgical Association and the New England Surgical Society. The first three of these bodies, which are national in scope, have three representatives on the Board. All of the other societies have one representative each. The representatives of the cooperating societies are nominated by the society which they represent and upon approval of the Board shall become members of it. The term of membership on the Board will be six years. The following were chosen to represent the cooperating surgical societies:

Dr. Evarts A. Graham, Dr. Arthur W. Elting and Dr. Allen O. Whipple, representing the American Surgical Association.

Dr. Donald Guthrie, Dr. Erwin R. Schmidt and Dr. Harvey B. Stone, representing the American College of Surgeons.

Dr. Fred W. Rankin, Dr. Howard M. Clute and Dr. J. Stewart Rodman, representing the Surgical Section of the A. M. A.

Dr. Philemon E. Truesdale, representing the New England Surgical Society.

Dr. Thomas Orr, representing the Western Surgical Association.

Dr. Robert Payne, representing the Southern Surgical Association.

Dr. Thomas Joyce, representing the Pacific Coast Surgical Association.

The following officers were elected: Chairman, Dr. Evarts A. Graham; Vice-Chairman, Dr. Allen O. Whipple; Secretary-Treasurer, Dr. J. Stewart Rodman.

Two groups of candidates are recognized for qualification by the Board: (a) Those who have already amply demonstrated their fitness as trained specialists in surgery; (b) Those who, having met the general and special requirements exacted by the Board, successfully pass its qualifying examination.

The first of these groups, the Founders Group, upon invitation by the Board will be chosen from the following: (1) Professors and Associate Professors of Surgery in approved medical schools in the United States and Canada; (2) Those who for fifteen years prior to the Board's organization have limited their practice to surgery; (3) Members of the American Surgical Association, the Southern Surgical Association, the Western Surgical Association, the Pacific Coast Surgical Association and the New England Surgical Society, who were in good standing January 9, 1937.

All applications for the Founders Group must be received within two years of the Board's organization, January 9, 1937. No candidates for the Founders Group will be considered after that date.

Requirements for those to be qualified by examination will be as follows: (1) Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the A. M. A. or graduation from an approved foreign school; (2) Completion of an internship of not less than one year in a hospital approved by the same Council, or its equivalent in the opinion of the Board; (3) *Special Training.* A further period of graduate work of not less than three years devoted to surgery taken in a recognized graduate school of medicine or in a hospital or under the sponsorship accredited by the American Board of Surgery for the training of surgeons. This period of special training shall be of such character that the relation of the basic sciences of anatomy, physiology, pathology, bacteriology and biochemistry is emphasized. Knowledge of these sciences as applied to clinical surgery will be required in the examination. Adequate operative experience in which the candidate has assumed the whole responsibility will be required. An additional period of not less than two years of study or practice in surgery; (4) The candidate must present to the Board sufficient evidence of good moral character as to justify it in the belief that he will not engage in fee splitting and other dishonest practices.

It is expected that the Board, with the assistance and cooperation of the American Medical Association and the American College of Surgeons, will be able to increase the facilities which now exist for the adequate training of young surgeons by means of residencies, fellowships, etc., in suitable hospitals.

The above requirements, especially those referring to surgical training, are subject to change from time to time as the existing opportunities for training in this field of specialization may be broadened.

The qualifying examination will be divided into two parts; Part I, written, and Part II, clinical, bedside and practical. The written part, Part I, will concern itself with general surgical problems and with the clinical application of the basic sciences of surgery to these problems. This examination will cover a period of three hours each and will be held simultaneously in as many centers as are necessary to accommodate the number of applicants who are eligible. Part II is entirely oral and will also concern itself, in the main, with general surgery and, as stated for Part I, clinical application of the basic sciences to the clinical problem represented. In addition to this, in Part II, an examination will be given to test the candidate's knowledge of operative surgery, X-ray plate interpretation and the principles and application of surgical anesthesia. This examination will be held in as many centers as the Board may determine necessary to accommodate the eligible candidates. Re-examinations will be allowed providing one year shall elapse between examinations.

The fee for Group A, the Founders Group, shall be $25. The fee for Group B shall be $75, payable as follows: $5 for registration fee, which shall be returned if the candidate is not accepted for examination; $20 for Part I; and $50 for Part II. The same fee will be required for each re-examination. Once the candidate has become qualified, he will have no further financial obligation to the Board.

This Board is a non-profit organization. All fees will be used, after a reasonable amount is set aside for necessary expenses in maintaining its office, conducting examinations, etc., to aid in improving existing opportunities for the training of the surgeon.

A certificate attesting to a candidate's qualifications in surgery after meeting the requirements of the Board will be issued, having been signed by its officers.

Any certificate issued by the Board shall be subject to revocation by the Board at any time in case it shall determine in its sole judgment, that a candidate, who has received a certificate, either was not

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properly qualified to receive it or has become disqualified since its receipt.

The Board will hold its first examination (Part I, written) on September 20, 1937. All inquiries concerning applications for this examination should be received by the secretary's office promptly.

Requests for booklets of information, application blanks, and other information should be addressed to the Secretary, Dr. J. Stewart Rodman, 225 South 15th Street, Philadelphia, Pennsylvania.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of April, shows the following cases compared with the same month in 1936.

	1937	*1936*
Typhoid and Paratyphoid	14	14
Diphtheria	36	56
Scarlet Fever	60	214
Measles	1,808	564
Meningitis	44	43
Poliomyelitis	2	2
Rocky Mountain Spotted Fever	0	0
Typhus Fever	0	0
Undulant Fever	2	2
Tularaemia	1	0
Smallpox	2	2

INSTITUTE FOR DOCTORS' HELPERS

A five-day institute for the instruction of midwives will be conducted by the Department at the Medical Building, University of Virginia, July 26th to 30th. Similar conferences already have been held this year at Luray, at the Konnarock Training School, Konnarock, and at Council, Virginia.

Institutes for colored midwives will be in session July 12th to 16th and August 2nd to 6th at Hampton Institute, Hampton, and at the Virginia State College for Negroes, Petersburg, respectively.

It is estimated that for the year approximately three hundred women will have received basic instruction associated with the non-medical assistance of obstetrical cases.

GRADUATION EXERCISES AT THE STATE SANATORIA

Graduation exercises for the Nurses' Training Schools at Blue Ridge, Catawba, and Piedmont State Sanatoria were held on the evenings of May 4th, 5th and 6th, respectively. Six nurses at Blue Ridge, eight at Catawba, and three at Piedmont received their diplomas, thus professionally qualifying them for expert tuberculosis nursing duty.

HEALTH DEPARTMENT EXHIBITS

The Department arranged an exhibit in connection with the recent National Convention of the Parent-Teachers Association held in Richmond, May 3rd to 7th. Pictorial charts, graphs, and literature pertaining to child health conservation comprised this exhibit.

The Department also was an exhibitor at the annual State Safety Conference in Roanoke, May 17th to 20th. That exhibit emphasized industrial hygiene and crippled children activities.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. FRANKLIN D. WILSON, 5352 Studeley Avenue, Norfolk.
President-Elect—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.
Corresponding Secretary—MRS. C. C. SMITH, 1219 West Princess Anne Road, Norfolk.
Recording Secretary—MRS. F. O. PLUNKETT, 2 Riverview Place, Lynchburg.
Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.
Chairman, Press and Publicity—MRS. W. AMBROSE McGEE, 4107 Kensington Avenue, Richmond.

Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society held an interesting meeting in the Library of the Medical Arts Building on May 5th, with Mrs. B. A. Doggett, President, presiding.

Two hundred and twelve dollars and sixty-five cents was cleared from the card party and dance held April 7th. This amount will be used for the Auxiliary bed in the Victory Memorial Hospital. A committee was appointed to confer with the Advisory Board to decide who was to occupy this bed.

The Auxiliary had a booth in the Seaboard Citizens Bank Building for one day for "The Prevention

and Cure of Cancer." This was the first year of the drive, and the results were very satisfactory.

"Doctor's Day" was observed at this meeting. Mrs. K. W. Howard of Portsmouth presented the Doctor's Day Program and gave the Auxiliary a scrapbook in which she is putting all clippings pertaining to the work of the local physicians. Mrs. Frank Wilson read a beautiful poem dedicated to "Our Doctors".

Mrs. Frank Redwood gave a talk on "The Mental Hygiene Clinic" which was most interesting.

The President appointed a nominating committee to present a slate of officers at the first fall meeting in September. Mrs. C. J. Devine, president-elect, becomes president, but all other offices will have to be filled.

(MRS. WILBERT E.) RUBY D. BUTLER

Interesting Public Exhibition.

I would like to urge every Doctor's wife who comes to Richmond before October 1st to stop by the Richmond Academy of Medicine Building, at 1200 East Clay Street, and spend some time viewing the Bi-Centennial medical exhibits. They are well worth your time and an education in themselves. The Formal Opening was Saturday Night, May 15th, and the Exhibit is now open to the public every day except Sunday from 10:00 A. M. to 1:00, and 2:00 to 5:00 P. M. They will be on display until October 1st.

(MRS. W. AMBROSE) LOIS L. MCGEE

Truth About Medicine

In addition to the articles previously enumerated the following has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Eli Lilly & Company

Merthiolate Suppositories 1:1000.

Propaganda for Reform

"Is Milk Cancer's Ally?"—The March issue of *Coronet* leads off with an article entitled "Is Milk Cancer's Ally?" which betrays a broad and comprehensive ignorance of milk and of cancer. Here is the old argument that modern civilized man died of cancer but the American Indian did not die of cancer. The answer is of course that modern civilized man has a life expectancy of some sixty years at birth whereas the life expectancy of the Indians was about thirty years at birth. The Indians simply did not live long enough to die of cancer. More than 90 per cent of deaths from cancer occur in persons over forty years of age. Some preposterous arguments are made to show that cancer rates are higher in the states using the most milk. It may easily be shown that life expectancy is longer in the states using most milk because of better nourishment in those states. There is evidence that the article has already produced fear in the minds of some readers who do not stop to remember that neither the author of the article nor the magazine that prints it has the slightest scientific standing. (*J. A. M. A.*, March 13, 1937, p. 889.)

The Search for New Insecticides.—Lead arsenate has been for years the main reliance in the control of insects that prey on food crops. As the product is poisonous a significant amount of residue from its use on fruits and vegetables is deleterious to health. The United States Department of Agriculture has been endeavoring to discover a more nearly ideal insecticide. The most promising discovery which the department has made is a sulfur compound called phenothiazine. This new product, which is easily prepared by combining sulfur and diphenylamine, has been tested in large scale field tests, which, although highly encouraging, showed the need for more study. The main objection to using phenothiazine in the orchards is its effect on the skin of those who handle it. The Department of Agriculture has also studied the use of nicotine combined with other substances, including soap or lime sulfur mixture, bentonite, and peat. A disadvantage of nicotine sprays is that they are expensive; furthermore, too many applications may injure foliage. The Department of Agriculture is also endeavoring to synthesize the insecticidal principles of pyrethrum. Out of these varied investigations by the Department of Agriculture probably will come a practical and efficient new insecticide. As yet, however, not one of the numerous products studied is recommended for general use. (*J. A. M. A.*, March 27, 1937, p. 1124.)

Potassium Chlorate in Dentifrices.—Potassium chlorate has long been used as a constituent of mouth washes, gargles, dentifrices and extemporaneous preparations for oral conditions such as stomatitis and mercurial poisoning. Pharmacologic and therapeutic considerations have tended largely toward discrediting such usage, but the exploitation of pharmaceutic products containing large amounts of this salt, particularly dentifrices and gargles, continues nevertheless with an apparent disregard of the possible hazards to health. The Council on Dental Therapeutics will not accept any dentifrice for daily use which contains potassium chlorate. A. P. Richardson of the department of pharmacology of Stanford University School of Medicine recently reinvestigated the toxic potentialities of continued administration of chlorate for blood and tissues. Richardson points out that prolonged use of products containing potassium chlorate, which is a not uncommon practice, might result in sufficient absorption of chlorate, particularly when aided by frictional devices, local lesions, such as ulcers and pus pockets, and other inflammatory states, to produce injurious effects on the blood, kidneys, liver and general health. This salt, Richardson therefore concludes, has no real place in the cosmetic armamentarium. A salt action, when desired, may be obtained with ordinary

sodium chloride which can be used virtually with impunity. The inclusion of potassium chlorate in the current edition of the Pharmacopeia deserves to be reconsidered in the light of these experiments. (*J. A. M. A.*, April 17, 1937, p. 1343.)

Book Announcements

Synopsis of Pediatrics. By JOHN ZAHORSKY, A. B., M. D., F. A. C. P., Professor of Pediastrics and Director of the Department of Pediatrics, St. Louis University School of Medicine, and Pediatrician-in-Chief to the St. Mary's Group of Hospitals; Fellow of the American Academy of Pediatrics. Assisted by T. S. ZAHORSKY, B. S., M. D., Instructor in Pediatrics, St. Louis University School of Medicine, and Assistant Pediatrician to the St. Mary's Group of Hospitals. Second Edition. St. Louis. The C. V. Mosby Company. 1937. 12mo of 367 pages. Cloth. Price, $4.00.

There are any number of abbreviated text-books in Medicine, but few are as complete as Dr. Zahorsky has made this synopsis. Small print and cutting out all reference to allied pre-clinical science has helped.

The book is divided into sixty (60) chapters corresponding to the sixty (60) hours allowed to lecture to cover the subject of pediatrics in a medical course for undergraduate. The general arrangement of the chapters follows that of standard text-books, starting out with growth and development and working through nutrition, feeding diagnosis, therapeutics of a general nature and up to the definite disease.

The growth and development chapter is a good drawing and fair picture of the organism as a whole. However, some pediatricians have found their average height and weight for children much more accurate if they add one other measure, the width (biiliac diameter tables for the use have been worked out and are easily applicable.)

Under feeding there are so many complicated ways of working out a child's energy requirements. We are glad to see none of these have been stressed to the exclusion of a common sense estimate of quantity, quality and amount at each interval.

Perhaps one reason for the popularity of this synopsis lies in stressing the use of our five senses in making a diagnosis. In the chapter on infectious diseases, infection of the respiratory tract and alimentary tract, which cover most of children's ills, this is particularly true. The author places special emphasis, with plates and illustrations as well as references in the text, to the appearance of the stool and of the throat and tongue, which together with the feel of the pulse, respiratory excretor and the appearance of the child, constitute the most successful armament for a diagnosis obtainable.

A great deal that goes into the treatment section of a text-book is useless verbiage. In this synopsis under pertussis there is a good page of treatment, concise yet full, but most of the treatment paragraphs have been cut so they seem almost cursory, for instance, asthma, genito-urinary, etc. It is reassuring to a physician and a parent to know the various treatments used. Even if unsatisfactory, knowledge gives us freedom and freedom from our would-be officious helper is an asset.

This is undoubtedly a useful and practical synopsis.

W. E. CHAPIN.

Pediatric Nursing. By JOHN ZAHORSKY, A. B., M. D., F. A. C. P., Professor of Pediatrics and Director of the Department of Pediatrics, St. Louis University School of Medicine; and Pediatrician-In-Chief to the St. Mary's Group of Hospitals; etc. Assisted by BERYL E. HAMILTON, R. N., Graduate of St. Luke's Hospital, St. Louis. The C. V. Mosby Company. St. Louis. 1936. Octavo of 568 pages. With 144 Illustrations in the text and seven Color Plates. Cloth. Price, $3.00.

This book was written essentially for the nurse. The author has kept in mind the part played in the rapid progress of pediatrics, and has presented a text which is evident of this thought. The book is divided into two parts.

Part I is devoted to the science of pediatrics. In this section he presents a large amount of material in a concise and dynamic way. An attempt is made to present the scientific facts that the author considers most useful to the nurse.

Part II deals with nursing practice in pediatrics. He considers nursing in relation to the home as well as to the hospital. The methods of procedure may be adapted to any hospital technique.

The chapters on The Milk Laboratory and Preparation of Special Formula are definite assets.

The illustrations are sufficient to add to the interest and emphasis of the book. They are well selected. There are 144 in number, and seven of these are color plates.

The author invited criticism on chapters XXVIII and XXIX. In regard to this request it is my opinion that both of these chapters which deal with the newborn could be considered with obstetrics, thereby omitting them from this text. However, they are good chapters and well written.

The value of the book for reference is evident. As a text it is useful in part.

MAE TURNER, R. N.,
Supervisor of Nurses
Dooley Hospital.

The Management of Obstetric Difficulties. By PAUL TITUS, M. D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist to the Pittsburgh City Homes and Hospital, Mayview, and the Homestead Hospital, Homestead, Pa.; Secretary of the American Board of Obstetrics and Gynecology. St. Louis. The C. V. Mosby Company. 1937. Octavo of xxii-879 pages. With 314 Illustrations Including four Color Plates. Cloth. Price, $8.50.

The work is designed to be a practical aid to physicians who are meeting and contending with obstetric difficulties and emergencies. With a few exceptions it attains this aim admirably. The section on repeated abortions is disappointing, especially since the encouraging reports from the use of progestrin from Chicago and of wheat germ oil from Canada. In the treatment of placenta previa, the author makes no mention of the extraovular bag. This is unfortunate, for nothing is more useful to a general practitioner who is practicing obstetrics in the home.

I am disappointed that Dr. Titus, with his wide experience and practical turn, has not tried Bier's hyperemia in the treatment of breast abscesses. With it one can make use of smaller incisions. In fact, puncture with an 8 or 10 bore needle is sufficient. There is no need of packing. The treatment is much more comfortable to the patient, and the resultant scar is scarcely noticeable.

The chapters on the treatment of sterility can not be praised too highly. They alone are easily worth the price of the book.

M. P. RUCKER, M. D.

Handbook of Orthopaedic Surgery. By ALFRED RIVES SHANDS, Jr., B. A. M. D., Associate Professor of Surgery in Charge of Orthopaedic Surgery, Duke University School of Medicine, and Chief of the Orthopaedic Service, Duke Hospital, Durham, N. C.; etc. In Collaboration with RICHARD BEVERLY RANEY, B. A., M. D., Instructor in Orthopaedic Surgery, Duke University School of Medicine. St. Louis. The C. V. Mosby Company. 1937. Octavo of 593 pages. With 169 Illustrations. Cloth. Price $5.00.

"Handbook of Orthopaedic Surgery," by Alfred Rives Shands, Jr., is dedicated to Dr. William Stevenson Baer. Dr. Baer, were he living, would take pride in its author, his former pupil.

Dr. Shands, in the preparation of this book, did something which most authors would like to do and would profit from doing. In his preface he states that various sections of the manuscript were sent to twenty-four teachers of orthopaedic surgery and allied subjects for their criticism. Thus he presents, "not the views of one man or of one school, but the consensus of opinion as recorded in the orthopaedic textbooks and in the more recent orthopaedic literature, criticized and tempered with the experience and thought of twenty-four teachers of orthopaedic surgery and allied subjects representing eighteen different medical schools."

The text is really a handbook for, while it is short and concise enough not to weary with useless words, it is complete enough to cover practically every subject of orthopaedic surgery. The illustrations are nearly all pen and ink drawings and are as a whole good. Particularly good is the bibliography which is placed at the end of the book and consists chiefly of references to articles in journals in the past ten years. As a consequence, most of the treatment in the text is modern as, for instance, the emphasis placed on very early treatment for congenital dislocation of the hip, instead of the former practice of waiting until the child is two or three years old.

There are only two criticisms which this reviewer has to make. The right angle position of choice for ankylosis of the elbow is usually not as useful as when ankylosis is obtained at a slightly more obtuse angle (100°-110°). Also, we cannot agree that braces should not be used for the treatment of bowlegs and knock knees in children under three years of age. At this stage the use of braces will often correct the deformity completely.

Altogether the book is good, which is no surprise to anyone who is familiar with Dr. Shands' knowledge of orthopaedic surgery and his ability in its practice.

D. M. F.

Abortion. Spontaneous and Induced. Medical and Social Aspects. By FREDERICK J. TAUSSIG, M. D., F. A. C. S., Professor of Clinical Obstetrics and Clinical Gynecology, Washington University School of Medicine, St. Louis. This volume is one of a series dealing with medical aspects of human fertility sponsored by The National Committee on Maternal Health, Inc. St. Louis. The C. V. Mosby Company. 1936. Octavo of 536 pages. Illustrated. Cloth. Price, $7.50.

The book treats of a major problem confronting not only the medical profession, but the theologist, the social worker, statesmen, and all others interested

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in human welfare. When it is recalled that there were 68,000 abortions in this country last year, the far reaching medical and social consequences become apparent. The author presented his first monograph on the subject in 1910 and in this volume brings together the accumulated knowledge which comes from a continuous interest since that date.

The book is divided into four major sections. The first deals with the history of abortion. The widespread practice of abortion among savage races is described and the evolution of the practice is traced into modern life. The section is concluded with a chapter on "abortion in animals" by Dr. Walter L. Williams. The second part considers the problem of spontaneous abortion, the etiology, pathology, treatment, and complications. Section three deals with induced abortion and presents the indications for and the technique of therapeutic abortion. The criminal type of induced abortion is discussed and contraception or sterilization offered as a possible solution to the problem. The last section describes the social aspects of the problem. It contains much statistical data along medico-social lines, such as age, race legitimacy and religious aspects. The experiment in legalization of abortion conducted in the Soviet Union is described in detail.

The subject matter of this book is comprehensive and yet has none of the pedagogic tone of the text-book. The material is complete and brings under one cover all of the information now available on the subject.

The book is of paramount interest to the medical profession but can be a source of reference to all who interest themselves in social problems.

WILLIAM BICKERS, M. D.

Senile Cataract. Methods of Operating. By W. A. FISHER, M. D., F. A. C. S., Chicago, Ill. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Illinois; etc. Third Revised Edition. Chicago. H. G. Adair Printing Co. 1937. 12mo. of 150 pages. Cloth. Price $2.00.

This book reviews the numerous methods of cataract extraction, with chapters by various ophthalmic surgeons throughout the world, as well as the author. It gives a comprehensive review which is valuable as a reference book, and especially good advice in regard to learning the several techniques on animals' eyes.

E. H.

Ophthalmoscopy, Retinoscopy and Refraction. With New Chapters on Orthoptics. By W. A. FISHER, M. D., F. A. C. S., Chicago, Ill. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Illinois; etc. Fourth Revised Edition. Chicago. H. G. Adair Printing Co. 1937. 12mo of 210 pages. Cloth. Price, $2.00, postpaid.

This volume crowds a good deal of elementary knowledge into a small space. All of its contents can be found more accurately stated in other works. It is questionable whether the general practitioner or his patients will profit by the little learning to be obtained, and those who seriously practice ophthalmology will not be satisfied with it.

E. H.

Cataract. Its Preventive and Medical Treatment. For Specialists, General Practitioners and Students. By A. EDWARD DAVIS, A. M., M. D., Formerly Professor of Ophthalmology, New York Post-Graduate Medical School and Hospital (Columbia); Consultant Ophthalmic Surgeon, New York Post-Graduate Medical School and Hospital; etc. Philadelphia. F. A. Davis Company. 1937. Octavo of xix-161 pages. Cloth. Price, $3.00.

The thesis of this book is that cataract is a preventable disease, and one amenable to arrest after it has begun. The author chides the medical profession for an unscientific attitude of conservatism and pessimism and advocates extensive and expensive treatment, local and general, medicinal and dietetic, but chiefly his own lens antigen (immunological) treatment which he has recommended with enthusiasm for many years. There is much of interest in the book and it should encourage further investigation of the subject, but one could wish that a more conservative and scientific attitude had inspired the book and theories entirely unproven had not been advanced as facts.

The ability to prevent cataracts and to cure them without surgery is a consummation devoutly to be wished, but a careful reading of this book does not encourage one to believe that the knowledge now available leads to such results.

E. H.

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Editorial

A Fear Complex?

A recent issue of the *American Journal of Cancer* carried an article which should be read carefully by that part of the medical profession which seems convinced that cancer is on the increase and appears to delight in frightening out of their wits their fellow men and women who under skillful propaganda have been trained to shudder every time the word is mentioned.

Admitting the high incidence of cancer—the second high ranking cause of death in the United States, with 150,000 deaths to its credit each year—the author of the article reassures us with the assertion that "the cancer situation in the United States is far from alarming. A number of forms of cancer are already showing a decline in trends." He goes on to say that a "detailed analysis leads to the conclusion that much, if not all, of this increase is spurious. The rise in cancer mortality is practically limited to males, and among white men increases in the recorded death rates were sizable only at ages above fifty-five years. . . . This difference in the trend by sex is to be viewed in the light of the fact that about four-fifths of the cancers among males, but only half the cancers among females, occur in inaccessible sites, thus, improvement in diagnosis over the twenty-five year period (due to increased hospitalization, more skilled surgical treatment, more post-mortem examinations, and improved diagnostic procedures), would tend to raise the recorded mortality for males more than for females. In general, cancers of inaccessible sites show a rise in death rates whereas those in accessible sites exhibit a downward trend."

With appropriate gratitude for the 200 cancer centers which now dot the country and the record of 25,000 "cured" persons who have been registered by the American College of Surgeons within the last three years, one still wonders if we are not crying wolf a little too often and a little too loud, and if jangled nerves, fear complexes, and desperate resolutions may not in many cases rival the havoc of cancer itself.

Health and Marriage.

About a year ago the State of Connecticut wrote upon its statute books a law requiring health examinations before marriage. The intent of that law as summarized in the February issue of the *Journal of Social Hygiene* is as follows:

"1. Education of the public in regard to the nature of the disease syphilis, its method of spread, probability of transmission to the other marital partner (husband or wife), and syphilis spread to the offspring.

"2. A means of postponing marriage between an infected person and another while in the communicable stage of the disease.

"3. A stimulus to infected persons who may be

considering marriage to go and secure treatment if they have neglected to keep up treatment.

"4. To prevent the birth of congenital syphilitic children.

"5. To decrease the number of persons, children and adults, who may have to enter mental defective institutions or other institutions because of the effect syphilis has on the central nervous system.

"6. To promote marital happiness: During the period January 1, 1936, to December 31, 1936, there have been 14,601 blood examinations done under the law."

A sovereign state with power to issue licenses to marry, to declare who shall perform the marriage ceremony, and to deny the privilege of marriage to minors, epileptics and imbeciles, should logically extend its statutory provisions to prevent the marriage of syphilitics. Within the short period during which the Connecticut law has been in operation a number of unsuspected syphilitic infections in candidates for matrimony have been uncovered and it has been estimated that from 80-90 per cent of the persons so infected had no knowledge of their infection prior to the blood test. Approximately 15,000 persons have been married in Connecticut since the law was enacted. All of them could be certain that syphilis did not lurk in their bodies to produce almost certain domestic tragedy.

Pneumococcus Type VII.

In the split-up of the group of pneumococci formerly classified as Type IV, Type VII has assumed considerable importance. Numerically it ranks among the four commonest types to be found in the old Group IV. Pneumonias produced by this organism run the classical course of lobar pneumonia. Serum therapy has given favorable results. Finland, Maxwell *et al*, in the January issue of the *American Journal of Medical Sciences*, report 195 cases of Type VII pneumonia from the Boston City Hospital, thirty of which were treated with specific serum with an appreciable lowering of the death rate.

Pneumoperitoneum.

The X-ray is assuming increasing importance in obstetric and gynecologic diagnosis. The introduction of air into the peritoneal cavity as a further aid is the subject of a thought producing paper by Irving F. Stein in the April issue of *Radiology*. Here it is maintained that although the method is time-consuming, it is more reasonable than exploratory laparotomy, that it is free from danger, and that it is particularly useful in the differential diagnosis of intrauterine pregnancy, corpus luteum cysts, and unruptured tubal pregnancy.

S 855.

Physicians interested in the steadily unfolding purpose of the present administration relative to matters of public health and the medical care of the American people would do well to read, Bill 855 introduced into the Senate of the United States on January 15, 1937, by Mr. Capper, as the Federal Health Insurance Law. It is designed to promote state systems of health insurance through federal subsidy. When it joins upon the statute books the Old Age Pension Law and the Unemployment Insurance Act we shall have created in this country a notable triad of health legislation.

A Woman's Book.

The title of Dr. Rosalie Slaughter Morton's autobiography, *A Woman Surgeon*, is perfectly chosen. Surgeon she was and is, and a good one, but primarily, first, last and always, she is a woman. Her idealistic approach to her profession and her personal reaction to her patients epitomize the strength and weakness of a woman in medicine, a career which is at best a high calling and at worst a business, a career in which there must be a curious blending of self-negation and self-appreciation, demanding on occasion the utmost in personalities and the utmost in impersonalities.

The reviewer is frank to admit far more interest in the psychology of the writer than in the travels and services to humanity that took her from India to Labrador, from Salonica to New York, in war and in peace, varied and unusual as many of these were. One would expect from a woman going into medicine at the turn of the century much of the bitterness that warped and hampered so many of the early feminists. Perhaps it is because she represents a later generation in the struggle to prove the worth and ability of women in the professions, but, whatever the cause, the bitterness is fortunately almost altogether lacking. One suspects that the New Jersey Quaker strain in Dr. Morton's ancestry, which must surely be credited with the independence that enabled her to defy her family's wishes and follow her brothers in the family calling, was softened and made effectual by the Virginia setting of her youth, for the traditional Vir-

ginia conviction is that a woman's first duty is to please. One strongly suspects, without corroborating study of the frontispiece, that "he liked my profile" was the secret of at least some of the pleasant contacts and relations that Dr. Morton sustained with her masculine colleagues. There are more ways than one to skin a cat, and if a woman can perform a usually major operation painlessly and without shock it is everlastingly to her credit, more especially if she can take a healthy pleasure in the job the while. There are wars enough in the world without the battle of the sexes being further prolonged, a battle which has dragged on long enough in all consciousness.

The book seems quite a perfect presentation of a woman's best field in medicine. Private practice, yes, limited rather definitely to the diseases of women and children, but who calls that a limitation? Women in the biologic nature of things, not men, are subject to all the ills that flesh is heir to. Public health work, yes, with again no limitation to speak of, for public health work at its best is educational and must be directed in the final analysis at women, the makers of homes and preservers of life. Hospital and institutional work of all kinds, yes, with again a wide and varied field limited only by the ability to stand hard work and to suffer scant recognition for patient devotion to duty among the down and out who drag themselves to the doors of our outpatient departments day after day in the big cities or lie hopeless and unbefriended in the wards of our charity hospitals and poor houses. Dr. Morton's book proves that the doors in medicine are wide open to women who can stand its pace, but it says nothing to disprove the contention that if a woman is to succeed in medicine against the competition of men, as in any other profession, she had best be about ten times as well prepared as a man and about ten times as good as a man at his game.

There is a naiveté about the presentation of the life and works of Rosalie Slaughter Morton that is disarming to the accusation of egotism so easily given such autobiographies. If I tell the story of my life I must tell of my triumphs even at the expense of casting some doubt upon my native modesty and at the risk of convincing my audience that I think I am a great person. It is a difficulty that cannot easily be avoided save by turning my material over to a biographer who might well lose the special flavor that I might impart. In this case that would have been a pity, for Dr. Morton does impart a special flavor. The sympathetic reader will not be disturbed by such statements as "I was dynamic," and "I became cosmopolitan," realizing that Dr. Morton herself was surprised that a woman in a difficult field could win rich rewards, having steeled herself for a different fate, and that she was simply glad and grateful and without affectation in saying so. That the World World demanded talents of organization such as she possessed and that she used them to the fullest extent for all war sufferers, particularly Serbian, and for other women practitioners, increasing their prestige and extending the theatre of their operations, lifted her from the comparative obscurity of a successful New York practice to the bright light of an international fame.

The profession in Virginia acclaims Dr. Morton as a confrère who faced life with courage and determination, a desire to learn and a desire to be of service, and hopes that in the future her path will lie more in the state that gave her birth and towards which her eyes have often turned in the years that lie between.

N. B.

Department of Clinical and Medical Education of the Medical Society of Virginia

University of Virginia Post-Graduate Clinic.

The nineteenth Post-Graduate Clinic of the University of Virginia was held in the University Hospital on May 7th, and was devoted to a discussion of "The Diagnosis and Treatment of the Commoner Forms of Arthritis."

The particular phases of the subject discussed and those who led these discussions were as follows:

"Rheumatic Fever"—Dr. J. Edwin Wood, University, Va.

"Laboratory Aids in the Diagnosis of Arthritis"—Dr. John Staige Davis, Jr., New York City (Director of the

Arthritic Out-Patient Departments of the Post-Graduate and St. Luke's Hospitals).

"Focal Infections in Arthritis"—Dr. Stuart Craig, New York City (Otolaryngologist, Rockefeller Institute).

"Some Axiomatic Generalizations Useful in the Diagnosis of Joint Diseases"—Dr. Philip S. Hench, Rochester, Minn. (Chief of the Section on Diseases of Joints, Mayo Clinic).

"Physiotherapy in the Treatment of Arthritis"—Dr. Robert V. Funsten, University, Va.

"The Treatment of the Commoner Forms of Arthritis"—Dr. Philip S. Hench.

On the evening before the day of the clinic Dr. Hench gave a lecture on "Gout" before the University of Virginia Medical Society.

One hundred three persons attended the clinic, as listed below:

Dr. C. D. Moore, Wytheville.
Dr. Homer E. Clarke, Massie's Mill.
Dr. C. F. Graham, Wytheville.
Dr. E. M. Chitwood, Wytheville.
Dr. Hunter McGuire, Richmond.
Dr. Thomas F. Gill, Richmond.
Dr. J. A. Grizzard, Drewrysville.
Dr. B. F. Randolph, Arrington.
Dr. Reid White, Lexington.
Dr. W. O. Smith, Altavista.
Dr. T. D. Sloane, University.
Dr. J. G. Brown, Woodville.
Dr. G. C. Campbell, Staunton.
Dr. D. M. Kipps, Front Royal.
Dr. E. L. Grubbs, Front Royal.
Dr. R. L. Hillman, Emory.
Dr. W. I. Owens, Pulaski.
L. G. Cecil, Roanoke.
Dr. R. L. Raiford, Franklin.
Dr. W. H. Turner, Round Hill.
Dr. A. A. Sizer, Schuyler.
Dr. W. H. Gordon, U. S. Public Health Service.
Dr. W. H. Higgins, Richmond.
Dr. W. L. Powell, Roanoke.
Dr. H. H. Wescott, Roanoke.
Dr. M. B. Jarman, Hot Springs.
Dr. Jeanette Jarman, Hot Springs.
Dr. Marshall J. Payne, Staunton.
Dr. John E. Womack, Staunton.
Dr. W. F. Hartman, Swoope.
Dr. H. J. Morton, Stuart's Draft.
Dr. H. G. Byrd, Louisa.
Dr. B. L. Carleton, Newport News.
Dr. J. C. Cutler, Newport News.
Dr. N. B. Jeter, Covington.
Dr. A. E. Turman, Richmond.
Dr. William H. Parker, Richmond.
Dr. Philip Jones, Richmond.
Dr. Roy Kellum, Richmond.
Dr. Horace Hicks, Highland Springs.
Dr. Harry Hinchman, Richmond.
Dr. A. M. McLaughlin, Waynesboro.
Dr. J. F. Hubbard, Waynesboro.
Dr. F. J. Wright, Petersburg.
Dr. F. J. Wright, Jr., Petersburg.
Dr. George W. Parrott, New Market.
Dr. H. S. Daniel, Louisa.
Dr. O. W. Carper, Front Royal.
Dr. E. A. Harper, Lynchburg.
Dr. John Hundley, Lynchburg.
Dr. E. G. Scott, Lynchburg.
Dr. O. N. Shelton, Orange.
Dr. J. W. Knutson, U. S. Public Health Service.
Dr. O. L. Jones, Hopewell.
Dr. J. C. Coulter, Charlottesville.
Dr. Carol Rice, Sweetbriar.
Dr. J. J. Waff, Shenandoah.
Dr. M. O. Burke, Richmond.
Miss Susie M. Jones, University of Virginia.
Mrs. Cary Nelson Davis, University of Virginia.
Dr. Anita Lotti, Charlottesville.
Dr. F. M. Horsley, Arrington.
Dr. H. F. Sommerdahl, Roanoke.
Dr. R. L. Page, Batesville.
Dr. C. O. Dearmont, White Post.
Dr. Carroll Iden, Berryville.
Dr. Frank E. Tappan, Berryville.
Dr. H. C. McCoy, Gordonsville.
Dr. E. D. Davis, Jr., Crozet.
Dr. G. S. Fultz, Butterworth.
Dr. J. B. Dalton, Richmond.
Dr. Carleton Moorman, Altavista.
Mrs. G. Pettit, University of Virginia.
Dr. T. H. Tomlinson, Jr., U. S. Public Health Service.
Dr. F. D. Daniel, Charlottesville.
Dr. J. L. Stringfellow, Culpeper.
Dr. Granville Eastham, Culpeper.
Dr. O. K. Burnette, Culpeper.
Dr. A. F. Robertson, Staunton.
Dr. W. A. Murphy, Staunton.
Dr. T. E. Patteson, Ransoms.
Dr. Lewis Holladay, Orange.
Dr. C. P. Harsbbarger, Port Republic.
Dr. J. C. Harsbbarger, Harrisonburg.
Dr. J. L. Deuterman, Arlington.
Mr. Charles Massell, Atlanta, Ga.
Dr. Harry Harrison, Norfolk.
Dr. D. E. Watkins, Waynesboro.
Dr. J. M. Holloway, Fredericksburg.
Dr. James W. Hunter, Norfolk.
Dr. Boyd H. Payne, Staunton.
Dr. Wade C. Payne, Haymarket.
Dr. Charles W. Putney, Staunton.
Dr. W. R. Warren, Woodberry Forest.
Dr. D. O. Nichols, Charlottesville.
Dr. C. W. Holman, New York, N. Y.
Dr. W. D. Macon, Charlottesville.
Dr. R. A. Moore, Farmville.

Dr. C. C. Canada, East Falls Church.
Dr. E. B. Robertson, Danville.
Dr. M. L. Rea, Charlottesville.
Dr. Percy Harris, Scottsville.
Dr. E. J. Haden, Arvonia.

Seventy-one of the one hundred three registered listed themselves as general practitioners, the remainder being engaged in various specialties.

Obstetrics and Gynecology.

On May 22nd, Dr. Shamburger completed the post-graduate course which he was offering in the Peninsula and in Norfolk. Meetings were held in Williamsburg, for the doctors of James City and New Kent Counties; in Newport News; and in Norfolk. In Norfolk separate meetings were held for the white doctors and for the colored doctors there and in Portsmouth.

Until June 26th, Dr. Shamburger will be in Rockbridge, Alleghany and Bath Counties, holding meetings in Lexington, Covington and Clifton Forge.

Pediatrics.

Until June 26th, the post-graduate course in this subject will be offered in Southampton, Greenesville, Brunswick and Mecklenburg Counties. Dr. Arena's meetings will be held in Courtland, Emporia, Lawrenceville and Boydton.

As announced previously, he has been meeting the doctors of Augusta, Rockingham and Albemarle Counties in Staunton, Harrisonburg and Charlottesville.

Approval of Medical Societies.

Since many societies do not meet frequently, it is suggested that those wishing to avail themselves of either post-graduate course, whether now or later, take formal action at their next meeting. This will facilitate the making of final arrangements, since the courses are offered nowhere without local approval.

Proceedings of Societies

The Roanoke Academy of Medicine

Held its last meeting before Fall on May 3rd, at which time the following officers were elected: President, Dr. H. H. Westcott; vice-presidents, Drs. W. W. S. Butler, Jr., and T. J. Hughes; and secretary-treasurer, Dr. C. T. Burton. The executive committee is Drs. L. D. Keyser, J. W. Preston, T. D. Armistead, E. F. Flora, and E. G. Gill. Delegates and alternates to the meeting of the State Society were also named at this time.

The scientific program consisted of a symposium on oral lesions and infections, and the following physicians and dentists took part: J. L. Cabaniss, M. D.; Grady Gregory, D. D. S.; C. D. Nofsinger, M. D.; L. J. Walton, D. D. S.; and Linwood Keyser, M. D.

After the program German lunch and beer was served.

The Alleghany-Bath County Medical Society,

At its annual meeting in April, 1937, elected the following officers for the coming year: President, Dr. Thomas M. Winn of Covington; vice-president, Dr. R. L. Claterbaugh of Clifton Forge; and secretary-treasurer, Dr. R. P. Hawkins (re-elected), Clifton Forge.

The Arlington County Medical Society

Of which Dr. Ralph A. Quick is president and Dr. Robert H. Detwiler, secretary, held a banquet meeting on May 17th at the Army-Navy Country Club with Dr. Leon A. Martel of Washington, D. C., as guest speaker.

At the April meeting, Drs. Charles P. Cake and Ray Dawson of Washington, D. C., were elected to associate membership and delegate and alternate were named to the State Society meeting in October.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting in the Middlesex County Courthouse at Saluda, Va., on April 27th, with Dr. E. L. W. Ferry of Millers Tavern, presiding. The president, Dr. J. N. DeShazo of Center Cross, attended the morning session. Delegates to the State Society meeting in the Fall were named at this time and several new members were elected. Following the business session, members of the Society and visitors were entertained at dinner by the Middlesex doctors. At the afternoon session, talks were given by Dr. P. St. L. Moncure of Norfolk; Drs. F. S. Johns, L. T. Price, and Guy W. Horsley of Richmond; and Drs. Nelms and O. T. Amory of Newport News.

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The next meeting of the Society will be held at Gloucester C. H. in July.

The Amelia County Medical Society,

A unit of the Fourth District Medical Society, held its regular annual meeting on May 3rd, at which time the following officers were elected: President, Dr. G. A. Arhart of Amelia; vice-president, Dr. H. C. Rucker of Mattoax; and secretary-treasurer, Dr. James L. Hamner (re-elected) of Mannboro. Delegate and alternate were also elected at this time for the State Society meeting in October.

The Mecklenburg County Medical Society,

Unit of the Fourth District Medical Society, held its Spring meeting in South Hill, Va., on May 18th, with a good attendance. Following supper at the Nordan Hotel, the scientific meeting was held at the Masonic Temple. At this session, papers were presented by Drs. Wright Clarkson and Wm. B. McIlwaine of Petersburg, Dr. Porter P. Vinson of Richmond, and Dr. L. H. Hoover of Clarksville. A business session followed at which Dr. A. L. Carson of the State Health Department explained the pre- and post-natal clinics. After discussion, it was decided to ask for these clinics to be held at Boydton as also clinics in pediatrics. Delegate was elected to the State Society meeting at this time.

Dr. H. H. Braxton of Chase City and Dr. W. W. Wilkinson of La Crosse are president and secretary, respectively, of this Society.

Nansemond County Medical Society.

At a recent meeting of this Society, Dr. Charles C. Hedges, health officer of the Isle of Wight-Nansemond Health District, was elected secretary to succeed Dr. William F. Wild who went to New York several months ago. Dr. T. C. Joyner of Suffolk continues as president.

The Hanover County Medical Society

Held its May meeting in the form of a round-table discussion of pneumonia after Dr. A. E. Murray of Beaverdam had presented a paper on this subject. Dr. Judson T. Vaughan of Ashland, president of the Society, presided. Other officers are Dr. Hawes Campbell, Jr., of Hanover Courthouse as vice-president, and Dr. T. Eldridge Stanley of Montpelier as secretary-treasurer.

The Lynchburg Academy of Medicine, Inc.,

Held its regular meeting at the Elk's Club in Lynchburg on May 3rd, with the president, Dr. John Wyatt Davis, presiding. Dr. Fred Morrison presented an interesting and timely paper on "Eye Grounds with Illustrations." Dr. E. A. MacCornack of Lynchburg was elected to membership and Dr. W. L. Williams of Brookneal was elected to honorary membership because of eminence attained through a long, faithful practice of medicine. Delegates and alternates were also elected to the Roanoke meeting of the State Society. Dr. C. E. Keefer of Lynchburg is secretary-treasurer of the Society.

South Piedmont Medical Society.

At the regular semi-annual meeting of this Society in South Boston, April 20th, the following officers were elected for the ensuing year: President, Dr. A. P. Bohannon of Virgilina; vice-presidents, Dr. W. R. Martin of Charlotte C. H., Dr. W. Lloyd Eastlack of South Boston, Dr. Ernest G. Scott of Lynchburg, and Dr. W. W. Robertson of Danville; secretary-treasurer, Dr. John A. Owen (re-elected) of Turbeville. It was decided to hold the next meeting in Lynchburg on November 23rd.

News Notes

The State Society Meeting.

Plans are progressing splendidly for the meeting of the Medical Society of Virginia in Roanoke on October 12, 13 and 14, and it is hoped there may be a large attendance. Two innovations are to be made in this year's meeting—one in the scientific and one in the social program. Several round-table discussions will be held on Wednesday afternoon in place of the symposium which has been a feature for many years. As these are to be on varied topics, there should be something of interest for every member of the Society. With a view of bringing the members in closer contact, it was decided to have a subscription dinner on Wednesday evening, this to be open to members, their wives, and visitors. There will be a floor show during the dinner and perhaps

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dancing later. The members of the Roanoke Academy of Medicine, who will be hosts for the occasion, hope also to arrange for dry clinics on Tuesday afternoon.

This meeting should be full of interest and, if the members of the State Society will add their enthusiasm, it should be an outstanding session. Be sure to make your plans to attend.

A. M. A. Meeting.

The eighty-eighth annual session of the American Medical Association will be held in Atlantic City, N. J., from June 7th through June 11th. While headquarters, exhibits and various sections will be housed in Convention Hall on the Boardwalk between Mississippi and Georgia Avenues, the House of Delegates will hold its meetings in the Renaissance Room of the Ambassador Hotel. Drs. Wright Clarkson, J. C. Flippin and Walter B. Martin, regularly elected delegates, will represent the Medical Society of Virginia in the business sessions. All fellows attending this meeting are reminded that they should present their 1937 fellowship cards when registering.

As one of the playgrounds of America, the meetings at Atlantic City are always of unusual interest and because of its nearness, it is hoped that there will be a large attendance from Virginia.

The Virginia Society of Oto-Laryngology and Ophthalmology

Held its annual meeting at Stonewall Jackson Tavern, Staunton, Va., on May 8th. The President, Dr. Edwin W. Burton of the University of Virginia welcomed the visiting guests and members and read a paper on "Tuberculin in the Treatment of Ophthalmic Diseases." Dr. Edward H. Cary, invited guest from Dallas, Texas, gave a paper on "Affections of the Optic Nerve," and Dr. William B. Mason of Washington, D. C., also an invited guest, presented a paper on "The Use of Prontosil and Prontylin in the Treatment of Acute Streptococcus Infection in the Ear, Nose and Throat." Members of the Society reading papers were Dr. C. P. Jones of Newport News, Dr. Fletcher D. Woodward of Charlottesville, Dr. Charles A. Young and Dr. E. G. Gill of Roanoke, and Dr. H. Grant Preston of Harrisonburg.

Officers elected for the ensuing year are: President, Dr. M. H. Hood of Portsmouth; vice-president, Dr. G. G. Hankins of Newport News; and secretary-treasurer, Dr. Charles T. St. Clair of Bluefield, W. Va. Williamsburg was selected as the place for the meeting in May, 1938.

Married.

Dr. Charles Allen Easley, Jr., and Miss Elizabeth Stone Fitzgerald, both of Chatham, Va., on May 22nd. Dr. Easley, who was graduated from the Medical College of Virginia in 1932, is now on the resident staff of the Medical College of Virginia Hospitals.

Dr. William Patton McDowell of Norfolk, Va., and Mrs. Loula Dean Rees at Eufaula, Ala., January 23rd.

The American College of Physicians,

At its meeting in St. Louis, Mo., the latter part of April, installed Dr. James H. Means of Boston as president, and elected Dr. William J. Kerr of San Francisco as president-elect. Mr. E. R. Loveland of Philadelphia is executive secretary of the College.

Dr. Herman H. Hines

Announces his removal from Clinchco, Va., to Pardee, Va.

Drs. Graham and Tucker Honored.

Dr. W. T. Graham and Dr. Beverley R. Tucker, prominent Richmond physicians, have been appointed members of a permanent medical advisory board for the hospital for handicapped children endowed in the will of the late Alfred I. du Pont. This board is composed of eight doctors selected from various cities.

The first million dollar unit of the hospital will be constructed in Wilmington, Delaware, this summer. Eventually the residue of the A. I. du Pont estate, estimated at $60,000,000 will be available for this work which will not be confined to orthopedic work but to all types of mental and physical disabilities. The medical advisory board is to select children who stand a good chance of rehabilitation in society.

Medical College of Virginia Ex-Interns Meet.

The annual meeting of the ex-interns of the hospital division of the College was held on April 23rd, with the president, Dr. A. C. Broders, of Rochester, presiding. Papers were read by Drs. E. H. Williams and J. J. Scherer, of Richmond; Dr. W. R. Payne, Newport News; and Dr. J. M. Emmett, Clifton Forge. Clinics were held under the direction of the staff of

the College. An afternoon smoker and a dinner closed the meeting. Dr. J. S. Weitzel, Richmond, was elected president for the next year.

The Virginia Academy of Science

Held its fifteenth annual meeting at the University of Virginia, May 6, 7, and 8, 1937, with a registration of 376. The public address Friday night was given by Prof. Ernest Orlando Lawrence of the University of California under the joint auspices of the Academy and the University of Virginia Chapter of the Society of Sigma Xi. The subject of his address was "Atoms, New and Old."

The Academy prize of $50.00 was awarded to Prof. R. G. Henderson of the Virginia Polytechnic Institute for a paper entitled "Studies on the Downy Mildew Disease of Tobacco," and the Jefferson Gold Medal was awarded to Dr. William Branch Porter of the Medical College of Virginia for a paper entitled "Heart Changes and Physiologic Adjustment in Hookworm Anemia." Honorable mention was also accorded to J. R. Dietrich for a paper entitled "Propagation of Potential in Discharge Tubes," and to R. W. Quarles and A. F. Benton for a paper entitled "Heats of Absorption of Gases on Sodium Fluoride." A total of 179 papers were presented in the sectional meetings, thirty-nine being in the Section of Astronomy, Mathematics and Physics, fifty in Biology, twenty-nine in Chemistry, eleven in Education, twenty-five in Geology, seventeen in Medical Sciences, and eight in Psychology. There were also very interesting demonstrations in some of the sections.

The following officers were elected for the coming year: Prof. D. Maurice Allan of Hampden-Sydney College, President; Dr. E. C. L. Miller of the Medical College of Virginia, Secretary-Treasurer; Dr. F. L. Robeson of the Virginia Polytechnic Institute, President-Elect; and Dr. Robert F. Smart of the University of Richmond, Member of the Council. It was decided to hold the next meeting of the Academy in Blacksburg in the first week of May, 1938.

Following the meeting, there were two field trips, one by the geologists on Saturday afternoon, and one by the Claytonia Club (botanists) extending over Saturday afternoon and Sunday.

Heads Gloucester Rotarians.

Dr. James D. Clements, of Ordinary, Va., has been elected as new president of the Gloucester Rotary Club for the ensuing year.

Post-graduate Clinic For Negro Physicians.

The seventh annual Saint Philip Hospital Post-graduate Clinic for Negro physicians will be held under the auspices of the Medical College of Virginia, Richmond, Virginia, from June 14th to June 26th, as announced by Dr. Lee E. Sutton, Jr., dean of the school of medicine, director of the clinic.

This clinic provides intensive instruction for graduate physicians in the fields of medicine, pediatrics, obstetrics, and surgery, especially as related to general practice. The course this year will be somewhat varied from former years in order to make it profitable for those attending previously.

Dr. Theodore K. Lawless, Northwestern University, Chicago, Illinois, will be the invited clinician during the course. Dr. M. O. Bousfield, Director for Negro Health, Julius Rosenwald Fund, Chicago, Illinois, will also address the clinic.

As usual, the work will be given in the Saint Philip Hospital, a large modern institution for Negro patients, maintained as one of the units of the Hospital Division of the college, and in the out-patient department of the institution.

Physicians will be admitted from states other than Virginia, although the number as before will be limited. Under this plan personal instruction in small groups is made possible. The clinic as in the past will be subsidized by the General Education Board of New York City. A large attendance is expected from a number of states.

Doctors As Officers in Society of Colonial Wars.

Dr. Clifton M. Miller was elected governor of the Society of Colonial Wars in the State of Virginia, at the annual meeting of this organization on May 15th. Other doctors elected to office at this meeting are: Dr. J. Shelton Horsley as surgeon; Dr. Alexander G. Brown, Jr., as deputy governor-general for Virginia; and Dr. Charles R. Robins as a member of the council for one year. All of these doctors are of Richmond.

Tri-State Hospital Association.

The Hospital Association of Virginia and the Carolinas held its annual meeting in Raleigh, N. C., April 22-24. Drs. Lewis E. Jarrett, J. J. Scherer,

and Warren T. Vaughan, all of Richmond, were speakers on the program.

Dr. Jarrett was re-elected president of the Virginia division with the following other officers: Mr. W. M. Walters, Roanoke, and Dr. A. A. Perkins, Norfolk, vice-presidents; and Mr. Haskins Coleman, Richmond, secretary-treasurer.

Dr. Douglas F. Love,

An alumnus of the Medical College of Virginia, recently located at Bramwell, W. Va., has moved to Harman, Buchanan County, Virginia, where he is engaged in general and industrial practice.

Rotary Officers.

Dr. R. V. Funsten was elected vice-president and Dr. E. C. Drash a member of the board of directors of the Charlottesville Rotary Club for the ensuing year. Both are on the medical staff of the University of Virginia.

Dr. O. W. Ward

Of Hampton, Va., was named vice-president of the Bank of Phoebus, Va., at a meeting held recently.

News From University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on April 5th, Dr. Paul B. Barringer, former Professor of Physiology at the University, spoke on the subject of Medical Reminiscences.

Dr. Sidney Burwell, Dean of the Medical School of Harvard University, gave the Alpha Omega Alpha address on the occasion of the public initiation on April 12th. He spoke on the subject of Changes in the Circulation in Constrictive Pericarditis.

The Committee on Research of the American Philosophical Society has made a grant of $1,000 to Dr. Alfred Chanutin for technical assistance in connection with his investigations on kidney function.

On April 5th, Dr. J. Edwin Wood spoke before the Greenville County Medical Society of South Carolina on the subject of Recent Studies in Hypertension.

Dr. Clarence J. Gamble, of the Department of Pharmacology of the University of Pennsylvania, was a visitor here on April 5th.

On April 20th, Dr. H. B. Mulholland and Dr. John H. Neff spoke before the South Piedmont Medical Society, meeting in South Boston. Dr. Mulholland discussed New Advances in Therapy and Dr. Neff spoke on Kidney Tumors.

Dr. P. S. Hench, of the Mayo Clinic, spoke on the subject of Gout before the University of Virginia Medical Society on May 6th.

The nineteenth Post-Graduate Clinic conducted in cooperation with the Department of Clinical and Medical Education of the Medical Society of Virginia was held at the University of Virginia Hospital on Friday, May 7th. The Clinic dealt with "The Diagnosis and Treatment of the Commoner Forms of Arthritis." The speakers included Dr. J. Edwin Wood and Dr. Robert V. Funsten, of the University of Virginia Faculty, Dr. John Staige Davis, Jr., and Dr. Stuart Craig, of New York City, and Dr. Philip S. Hench, of the Mayo Clinic. The number of physicians in attendance was 103.

On May 13th Dr. W. H. Stoner, Representative of the Burroughs, Welcome and Company Experimental Research Laboratories at Tuckahoe, New York, gave a lecture to the Fourth Year Class on the subject of "Bacterial Chemo-Therapy as Illustrated by Prontosil and Related Drugs."

At the meeting of the University of Virginia Medical Society on May 6th the following officers were elected for the coming year: President, Dr. Dudley C. Smith; Secretary-Treasurer, Dr. Staige D. Blackford.

News From Duke University School of Medicine.

On April 26th, Dr. J. S. L. Browne, of the Royal Victoria Hospital, Montreal, lectured to the students and staff at Duke Hospital, on Studies of Sex Endocrine Physiology of the Female, and on May 3rd Dr. David M. Davis, Professor of Urology at Jefferson Medical College, lectured on Chronic Prostatitis.

During the winter quarter, Mr. Harold M. Horack, and during the spring quarter, Messrs. Thomas A. Gonder, Jr., and Albert F. Lee, of the senior class, studied in London.

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Dr. and Mrs. William Lett Harris

Of Norfolk, Va., are at Courtney Terrace, Virginia Beach, Va., where they expect to spend the summer.

American Foundation Studies in Government.

In the April 10th issue of the *Journal of the American Medical Association* is published an analysis of the report of the American Foundation Studies in Government on the subject of medical care. This report was compiled from answers to a questionnaire recently sent 10,000 physicians who have been more than twenty years in practice.

Among other things, the report suggests a further expansion in present provisions for giving a better quality of medical service to more people by the extension of the facilities of tax-supported laboratories so as to make available to physicians generally and thereby to furnish to patients at a low cost many of the modern methods which constitute the difference between knowing and guessing in diagnosis. These methods are expensive and the JOURNAL has made the following statement:

"As was revealed again in our recently published survey of hospitalization in the United States, the proprietary hospitals are fast disappearing. The nonprofit, voluntary hospitals have been having great difficulty in many places to keep their heads above the quicksands of bankruptcy. High taxes, government regulation, and other political and economic changes have lessened greatly the philanthropic funds available for medical institutions. Periods of depression have kept vacant the rooms and the beds from which hospitals in the past derived excess income for the support of service to the indigent and the new group, of which the social service worker speaks glibly as the 'medically indigent.' The JOURNAL would point out again that our hospitals are confronted today with problems much like those confronting the hospitals of Great Britain. The incomes of British hospitals have been diminished by these factors and, in addition, by the application of the compulsory sickness insurance system. The answer for this question, as suggested in Great Britain, may be government aid for the hospitals in relation to the amount of service rendered to those unable to pay for it. At the same time these institutions must retain sufficient independence to permit growth and expansion rather than reversion to the sluggishness that seems invariably to affect institutions under complete and permanent state control. Group hospitalization plans, so intensively agitated in this country by the Rosenwald Foundation and more recently by the American Hospital Association, are today actually nothing but an interesting experiment affecting a small part of the population, if not merely a 'stop-gap' for the present critical situation in hospital finance."

Dr. Fletcher J. Wright, Jr.,

Class of '34, University of Virginia, recently located at Princeton, W. Va., has returned to his former home in Petersburg, Va., where he will continue the practice of medicine.

Health Officer of Arlington County.

Dr. Earl Brown has been selected by the Arlington Board of Supervisors as Health Officer for that county. Until the date of his appointment Dr. Brown had been State Health Officer for Kansas, in which capacity he had served since 1925.

"200 Years of Medicine in Richmond and Virginia"

Is the theme of the exhibits commemorating the Richmond Capital Bi-Centennial and the Medical College of Virginia Centennial. The exposition was formally opened on the evening of May 15th and will remain open to the public through October 1st. Dr. Wyndham B. Blanton is chairman of the central committee in charge of the exposition.

The fifty-six displays, housed in the Richmond Academy of Medicine Building and Library of the Medical College of Virginia, were arranged by Richmond medical interests, including hospitals, nurses, drug establishments, dentists, physicians and surgeons. These exhibits give the progress of medicine in Richmond from the days of William Byrd to the present time and show contrasts of old and modern sick rooms and operating rooms, the evolution of transportation and professional dress, a picture gallery of Richmond doctors, old and modern surgical instruments, books written by Virginia physicians and surgeons, libraries by periods, medical photography and illustrations, children's clinics, and displays by the different departments of the Medical College of Virginia.

These exhibits are both interesting and educational and every reader of this notice is invited to avail himself of the privilege of seeing them.

Dr. McBrayer Resigns as Secretary.

Dr. L. B. McBrayer of Southern Pines, N. C., has resigned as secretary of the Medical Society of the State of North Carolina and Dr. Thomas W. M. Long of Roanoke Rapids, an alumnus of the Medical College of Virginia, has been appointed as his successor. Dr. McBrayer is a past president of his State Society and has been its secretary and treasurer for twenty-one years. In recognition of these and other services to the medical profession of North Carolina, he was made honorary secretary for life.

Dr. W. Ross Southward,

Richmond, Captain of the Richmond Light Infantry Blues, has been appointed medical examiner of the Bureau of Air Commerce of the United States Department of Commerce, succeeding Dr. Nelson Mercer, resigned.

Dr. Hugh L. C. Wilkerson,

Class of '33, Medical College of Virginia, assistant surgeon, Regular Corps, U. S. P. H. S., after five weeks in flood relief in Kentucky, Tennessee and Arkansas, has been transferred from his former permanent station at the U. S. Marine Hospital in St. Louis, Mo., to Cincinnati, Ohio. In the latter place he is working in cooperation with the State Department of Health in public health administration in Hamilton and Clermont Counties.

Pharmaceutical Symposium.

The Second Pharmaceutical Symposium of the Medical College of Virginia was held in the auditorium of the Richmond Academy of Medicine on May 20 and 21. The committee in charge of the program was composed of Mr. T. D. Rowe, chairman, and Drs. R. A. Deno, J. E. Davis, H. B. Haag and Mr. A. L. I. Winne. On the first morning greetings were extended by President Sanger of the College and Dean Rudd of the School of Pharmacy. The speakers that day were Drs. R A. Deno, J. C. Forbes and R. J. Main, and this session was followed by luncheon at Cabaniss Hall. The program on the second day included discussions by Dr. F. P. Fletcher, Messrs. G. E. Snider and T. D. Rowe, and Dr. W. G. Crockett.

The American Board of Surgery

Has recently been organized in response to a demand for an agency which will attempt to certify competent surgeons, as is the case with several of the surgical specialties. A full announcement in regard to this appears in the Miscellaneous Department of this issue of the MONTHLY.

Location Wanted—

Physician, single, 28, Protestant, University of Pennsylvania Medical School '33, with three years of hospital training, over half of which has been in surgery, desires location or association in surgery, preferably in Virginia. Address "Location," care this JOURNAL, 1200 East Clay Street, Richmond, Va. *(Adv.)*

Wanted—

Young physician as associate to assume major part of village and country general practice. Gentile preferred. Address "Practice," care this JOURNAL, 1200 East Clay Street, Richmond, Va. *(Adv.)*

Wanted—

By 30-bed hospital, located in Southwest Virginia, young graduate in medicine, licensed in Virginia, to help with general medical, surgical and obstetrical services. Position pays maintenance and $75.00 monthly to start. References required. Address "Southwest Virginia," care this JOURNAL, 1200 East Clay Street, Richmond, Va. *(Adv.)*

Obituary Record

Dr. William Hall Goodwin,

Connected with the surgical staff of the University of Virginia for more than twenty-five years and professor of clinical surgery and gynecology at the time of his retirement from active work a year ago, died at his home at the University of Virginia on May 23rd as the result of a serious heart ailment. He was born in Lexington, Ky., in February, 1882, and, after completing his academic education in that State, came to the University of Virginia for the study of medicine, in which he graduated in 1908. After interning there, he went to Bellevue Hospital, New York, but returned to the University of Virginia in 1910. Dr. Goodwin organized the University Base Hospital Unit during the World War and was in overseas service. Upon returning, he resumed his work at the University. He was a member of numerous local and national medical as well as social organizations. His wife survives him.

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Dr. Marion Edmond,

Eagle Rock, Va., died April 25th. He was a native of Henrico County, Va., and fifty-nine years of age. Dr. Edmond was a graduate of the Medical College of Virginia in 1901. He had been a member of the Medical Society of Virginia for thirty-one years, and was last president of the Botetourt County Medical Society.

The following resolutions were adopted by the Alleghany-Bath County Medical Society:

WHEREAS, God in His wisdom has seen fit to remove from our number our colleague and friend, Dr. Marion Edmond; and

WHEREAS, we, the members of the Alleghany-Bath County Medical Society, greatly feel the loss of our beloved associate. Now, therefore, be it,

RESOLVED, that a copy of these resolutions be incorporated in the minutes of the Alleghany-Bath County Medical Society, that a copy be sent to the bereaved family with expressions of our sympathy, and a copy be sent to the VIRGINIA MEDICAL MONTHLY.

J. V. JORDAN,
B. B. MCCUTCHAN,
R. P. HAWKINS, JR.
W. P. GILMER.

Dr. John Blair Spencer,

Well known physician of Gloucester, Va., died suddenly April 30th, having been in ill health for some time. He was fifty-five years of age and a graduate of the former University College of Medicine, Richmond, in 1904. Following his graduation, Dr. Spencer was located in Philadelphia and Washington and served as a surgeon in the U. S. Navy. In 1924 he moved to Gloucester where he established and directed a summer camp for boys. He had been a member of the Medical Society of Virginia for a number of years. His wife and two daughters survive him.

Dr. Edward Oscar Tinsley.

We have only recently received notice of the death of Dr. Tinsley of Air Point, Va., which occurred on May 7, 1936, at the age of 68 years. He graduated from the College of Physicians and Surgeons of Baltimore in 1897 and had practiced in Roanoke County for thirty-nine years, where he was greatly beloved and respected because of his active interest in the welfare of the people and all public projects. He was a member of the Roanoke Academy of Medicine and the Medical Society of Virginia. His wife and a daughter survive him.

Resolutions on Death of Dr. Hoy.

A special meeting of the Petersburg Medical Faculty was held on March 23, 1937, to express appropriate tribute of respect to the memory of Doctor William Preston Hoy.

WHEREAS, It has pleased Almighty God in His infinite wisdom to remove from our midst our friend and colleague, Doctor Hoy; now, therefore, be it

RESOLVED (First), That the Petersburg Medical Faculty received the announcement of his death with sentiments of deep and sincere regrets; and,

RESOLVED (Second), That in the death of Doctor Hoy the profession has lost an esteemed associate and useful member and the community a valued citizen; and,

RESOLVED (Third), That we offer to the family and relatives our heartfelt sympathy in their irreparable loss; and,

RESOLVED (Fourth), That these resolutions be spread on the minutes of the Faculty, that a copy be sent to the family, and to the VIRGINIA MEDCIAL MONTHLY, and be published in the local newspaper.

L. S. EARLY, *Chairman*
H. C. JONES,
E. W. YOUNG,
W. M. BOWMAN, *Secretary.*

Dr. William Charles Schroeder,

Baltimore, Md., died February 18th, at the age of sixty-one. He was a graduate of the University of Virginia, School of Medicine, in 1899, and was formerly connected with the U. S. Public Health Service. He was at one time superintendent of the Municipal Sanatorium at Otisville, N. Y., and was later connected with the Tuberculosis Sanatorium at Delhi, N. Y.

Mrs. Blanch Smith Clore,

Wife of Dr. J. N. Clore of Madison, Va., died at her home in that place on the morning of April 20th, at the age of sixty. Death was due to encephalitis.

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